# Total vegetation cover soil protection Region:LGA Gympie (R) QLD

This report describes vegetation protecting the soil surface from erosion during a chosen month compared to previous years. This report has been generated using MODIS fractional vegetation cover information available in Rangelands and Pasture Productivity (RAPP) map tool https://map.geo-rapp.org/#australia. The report is based on 500 metre pixel data on monthly time steps.

Land use forest cover:

**Date: December 2024** 

Results can be shown for the whole region (polygon), and separated by land use and forest cover classes which are likely to show different cover patterns and targets. Land use is divided into four broad classes: Conservation and natural environments, Agriculture, production native forests and plantation forests (no report), and other (no report). Agriculture is divided into grazing, crops and horticulture which are sub-divided into non-irrigated and irrigated. If forest is present land use is further divided into: non-forest, woodland forest and non-woodland forest. The area of each land use and forest class are shown as a map and chart. The report content is repeated for each land use and forest cover class that covers at least 1% of the area of the chosen region. Total vegetation Cover:

The total vegetation cover indicates where soil is likely to be protected from wind and or water hillslope erosion. Total vegetation cover for this month is shown on a map and chart classified into 4 classes.

- 71-100% High cover protected from wind and usually water erosion (high rainfall, steep slopes, and erodible soils may need greater than 80, 90, 95 and up to 100% cover)
  - 51-70% Moderate cover protected from wind erosion
  - 31-50% Low cover not protected
  - 0-30% Very Low cover not protected

Erosion protection: Wind erosion 50% total vegetation cover

The vegetation cover threshold required to prevent soil erosion is usually 50% to reduce wind erosion, 70% or 80% to reduce water (hillslope) erosion depending on the steepness and rainfall. Areas protected from erosion for the month:

- Map: water erosion protection (>70% cover) percentage area and hectares.
- Map: wind erosion protection (>50% cover) percentage area and hectares.

Comparison with previous years:

- Map: anomaly comparing this month to the average cover from the same month in previous years.
- Map: deciles rank of month against the same month in previous years.

Anomalies and deciles until September 2019 are calculated comparing to the same months 2001 to 2019. Extra monthly data will be used to calculate anomalies and deciles post September 2019 as they become available. Time series monthly from January 2001 to current:

# **Erosion protection**

- Wind erosion protection time series: percentage of the area of the region with greater than 50% cover for each month (orange lines). Horizontal lines are 10th (cover target) and 50th percentiles.
- Water erosion protection time series: percentage of the area of the region with greater than 70% cover for each month (blue line). Horizontal lines are 10th (cover target) and 50th percentiles.

### Rainfall

• Millimetres rainfall each month (black line).

Each time series is also stacked by year. The black line shows the current year of data.

Water erosion protection for higher rainfall and steeper slopes:

Water erosion protection on higher slopes. As slope increases, more cover is required to control water erosion. The thresholds reported are:

- the percentage area with pixels greater than 80% total cover.
- the percentage area with pixels greater than 90% total cover.
- the percentage area with pixels greater than 95% total cover.

## **Acknowledgment of data:**

- 1. http://www.agriculture.gov.au/abares/aclump/land-use/alum-classification
- 2. http://www.agriculture.gov.au/abares/forestsaustralia/sofr/sofr-2018
- 3. https://www.dpi.nsw.gov.au/agriculture/pastures-and-rangelands/establishment-mgmt/production-management2/groundcover
- 4. MODIS Fractional cover algorithm:

https://doi.org/10.4225/08/5848a3f19a7b3



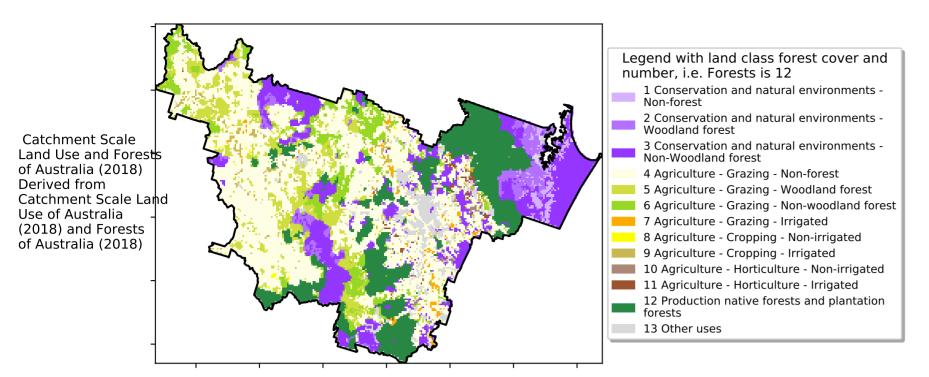




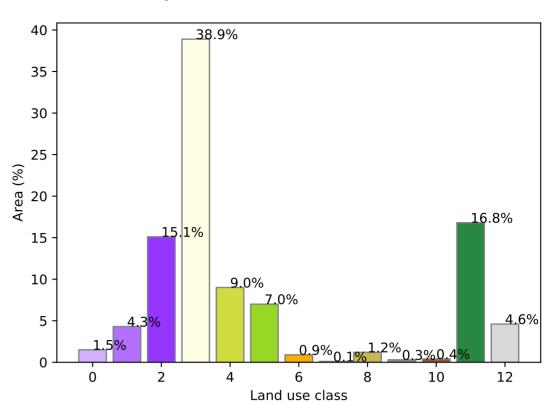


# **Vegetation Cover Dec 2024**

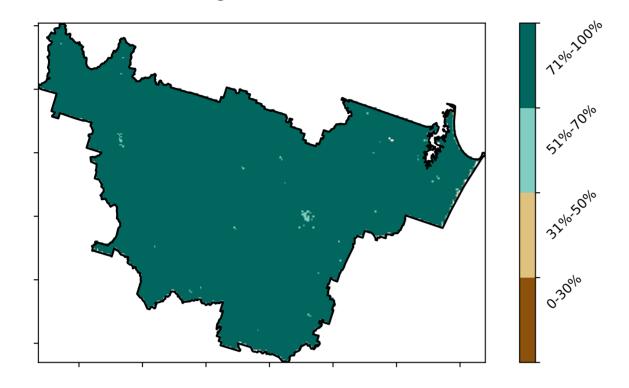
#### Land use and forest cover



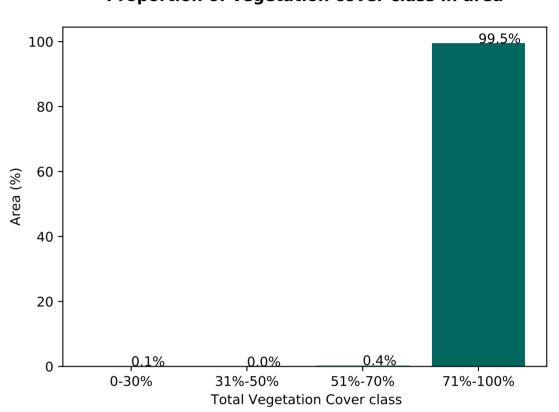
#### Proportion of each land class in area



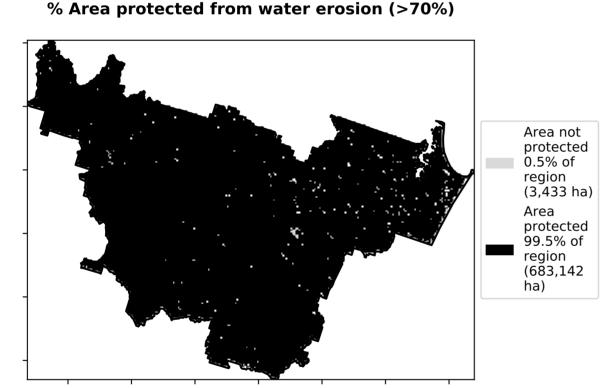
#### Total Vegetation Cover [%]



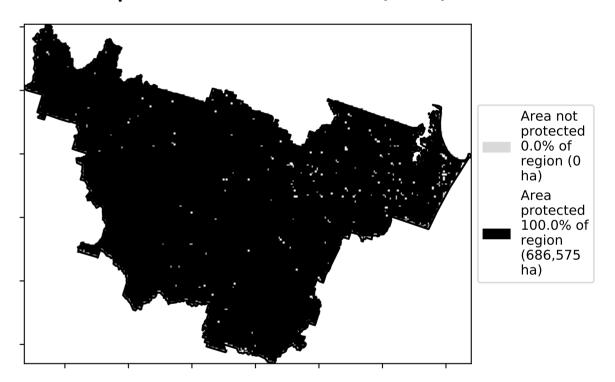
Proportion of vegetation cover class in area



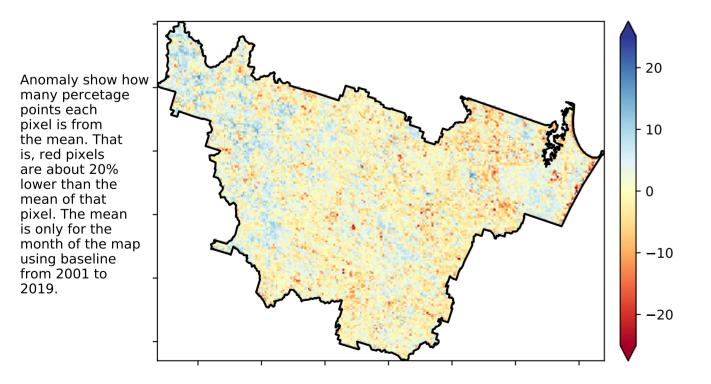
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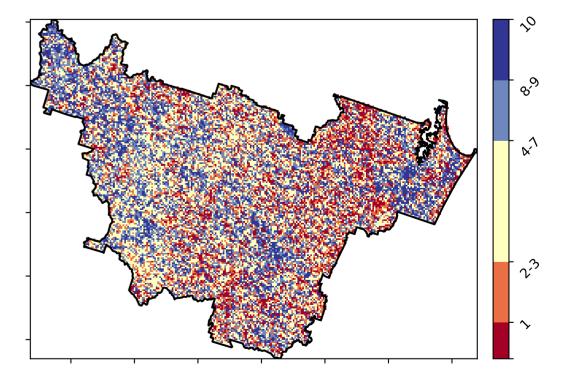
% Area protected from wind erosion (>50%)



## Total Vegetation Cover Anomaly [%]



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

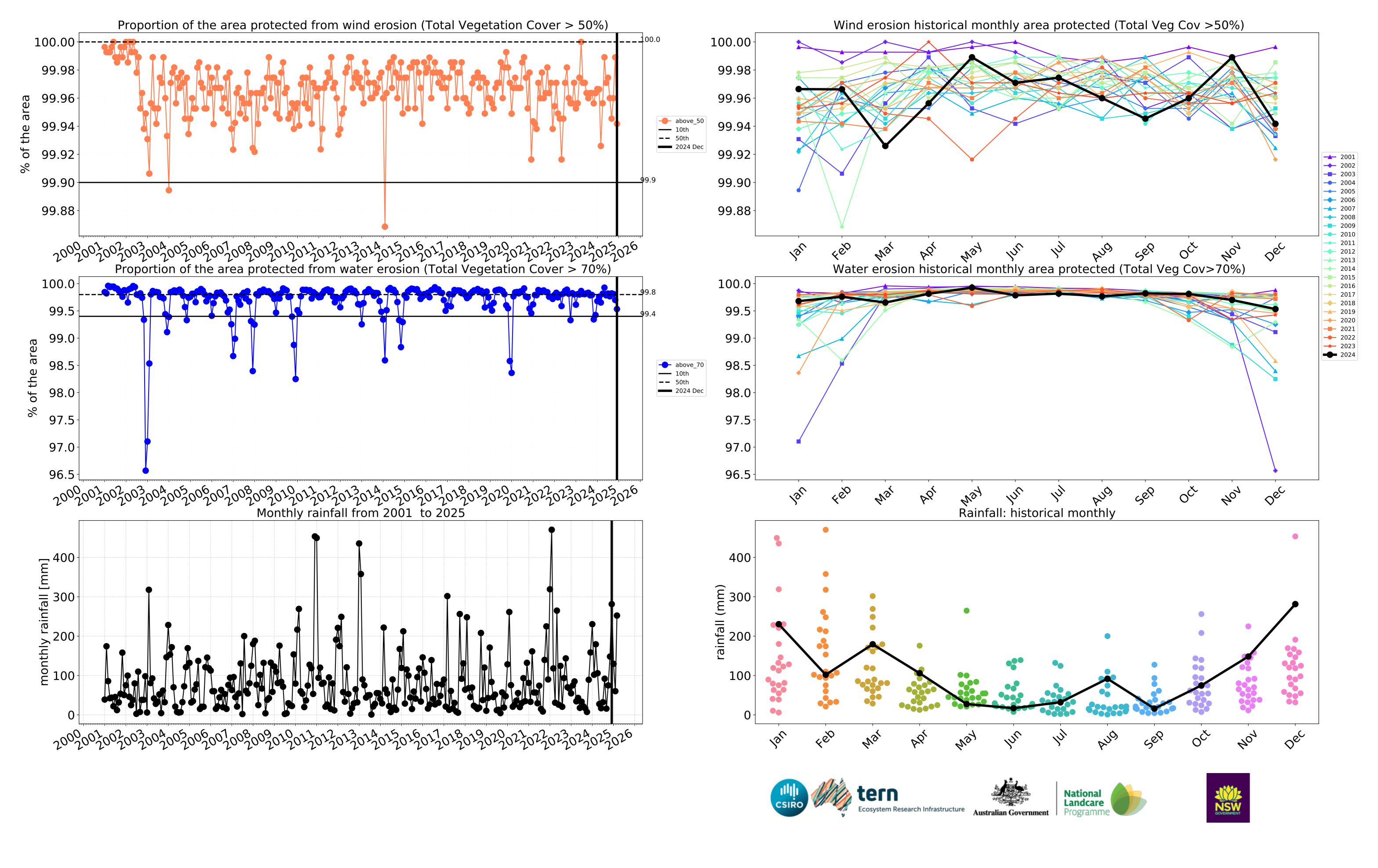


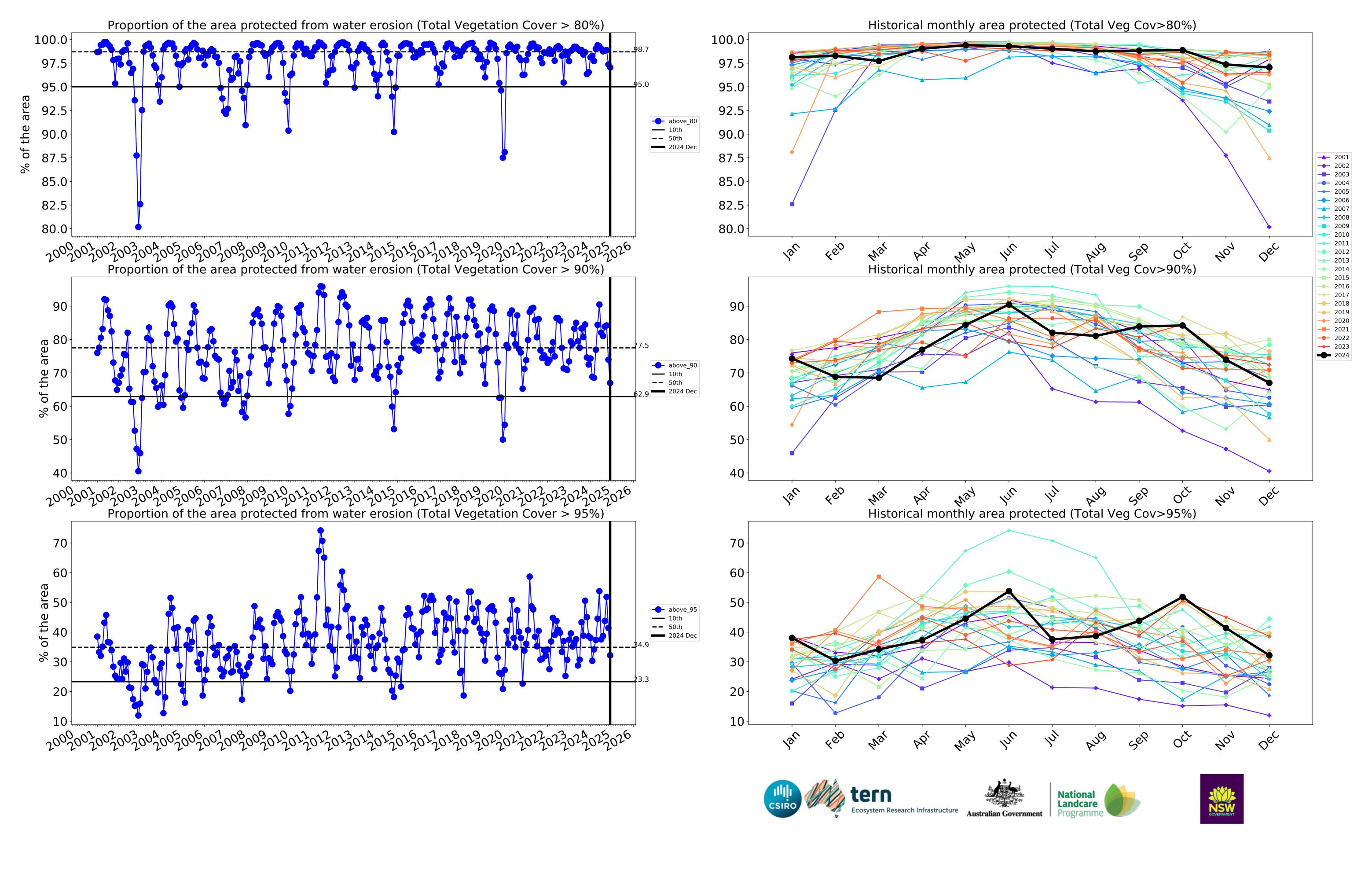




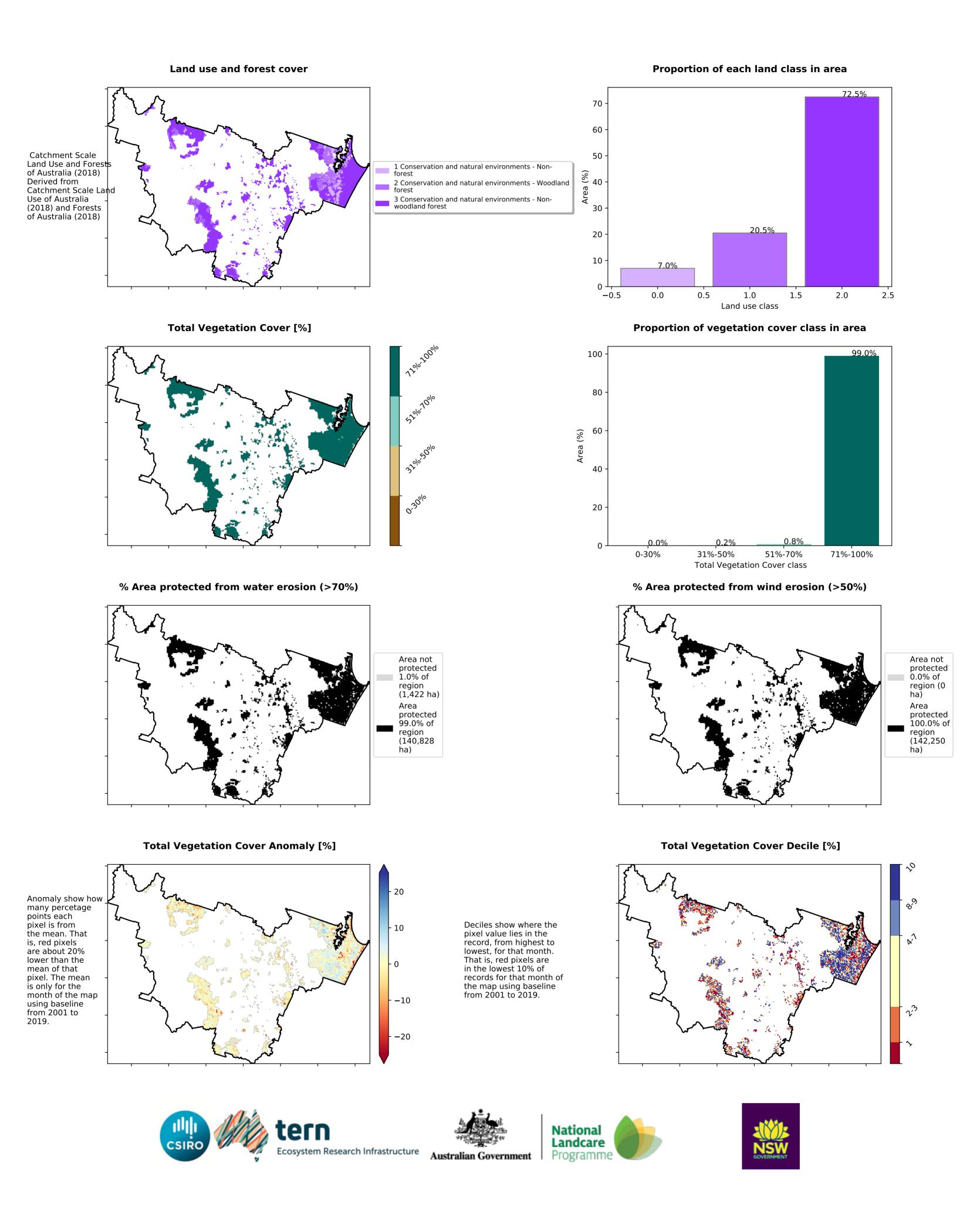




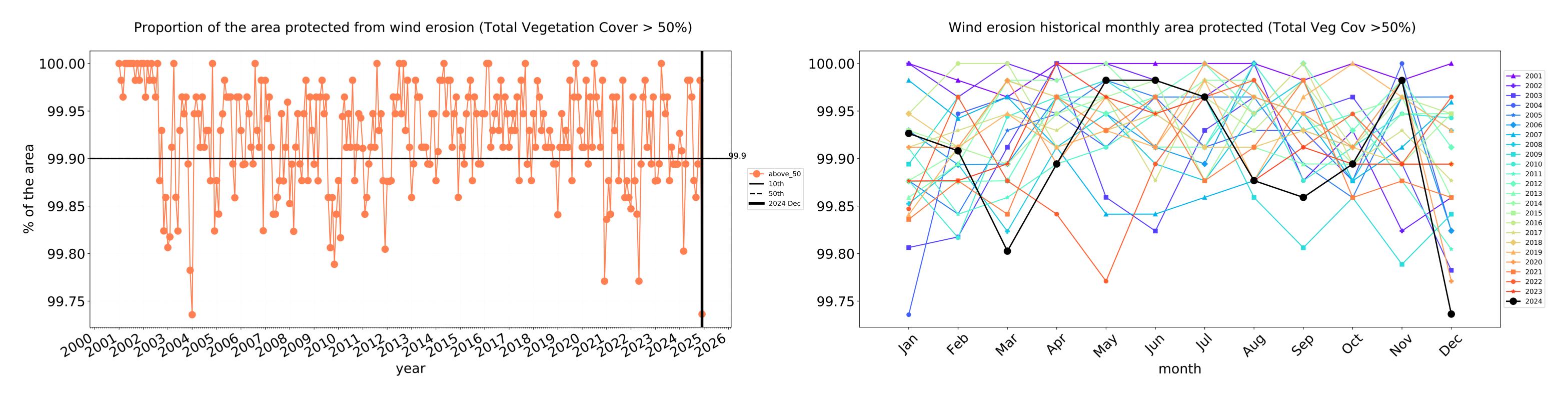


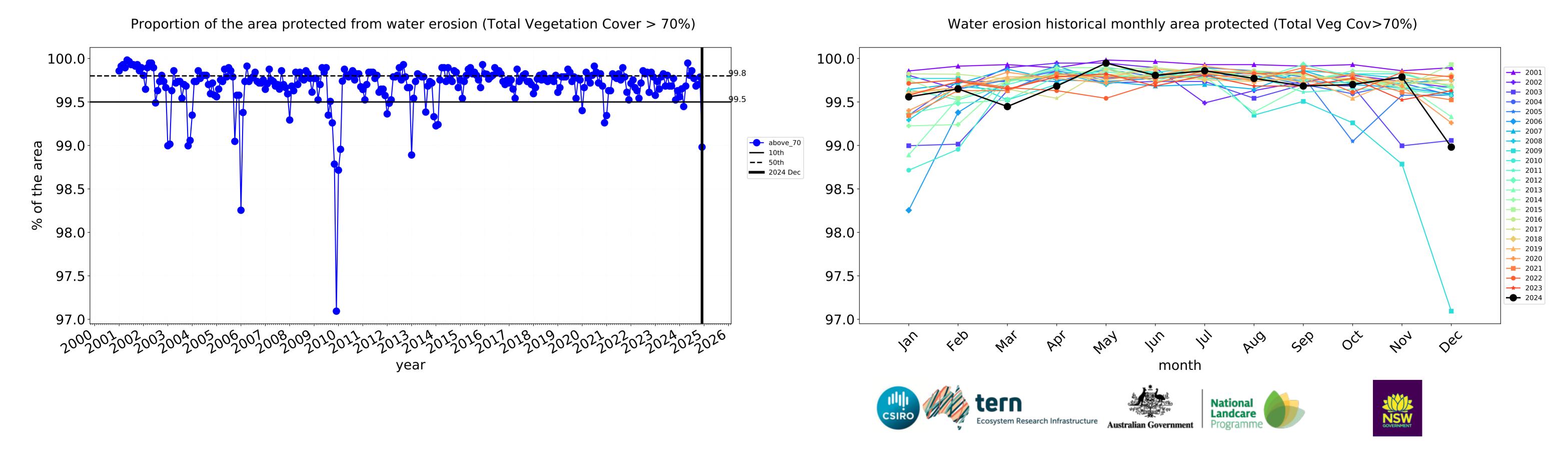


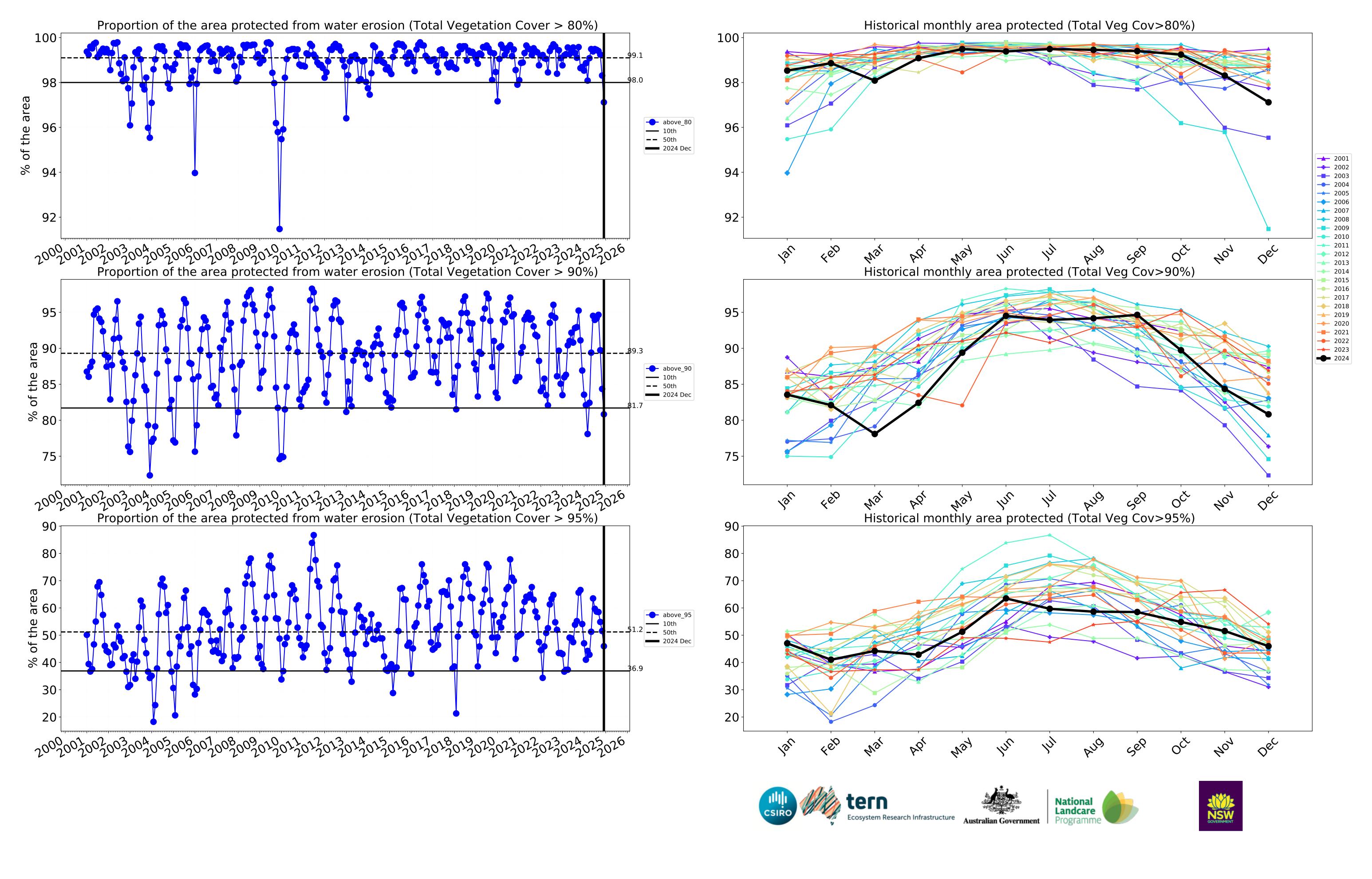
## **Conservation and natural environments**



# **Conservation and natural environments timeseries**

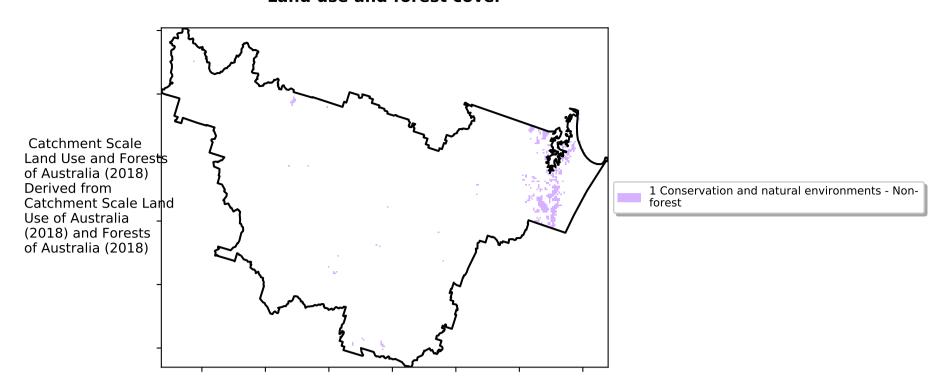




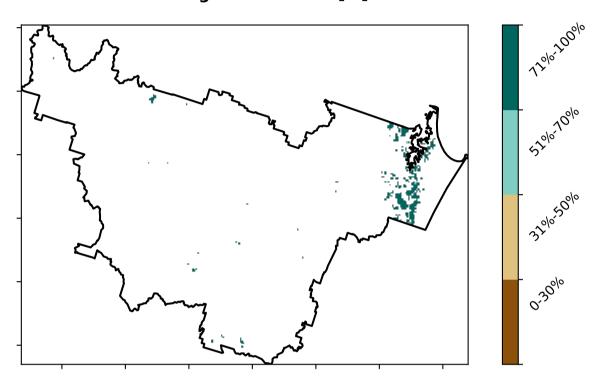


# **Conservation and natural environments non forest**

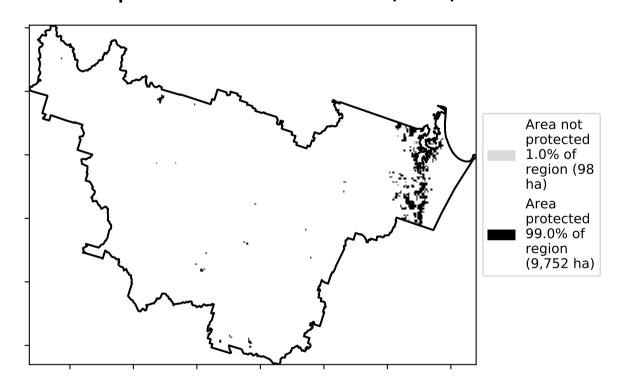
#### Land use and forest cover



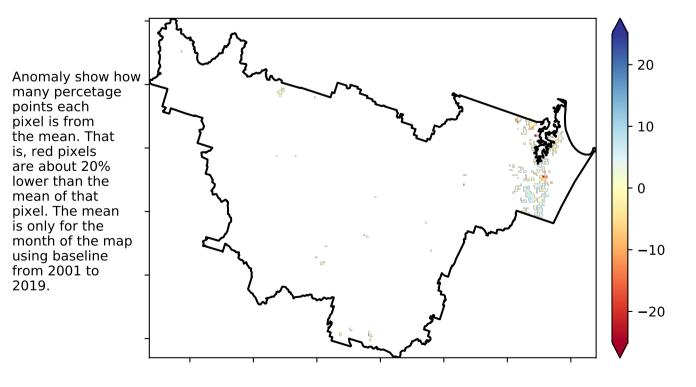
#### Total Vegetation Cover [%]



#### % Area protected from water erosion (>70%)

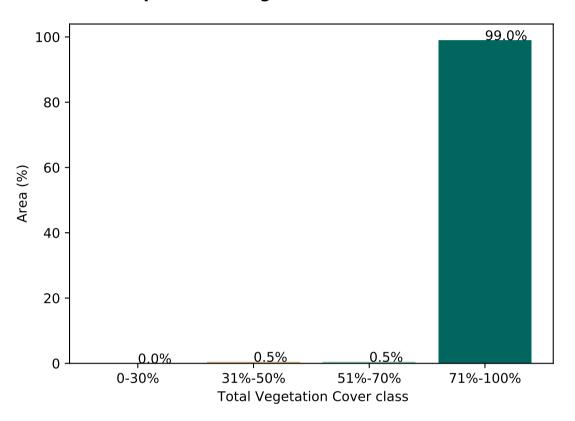


#### **Total Vegetation Cover Anomaly [%]**



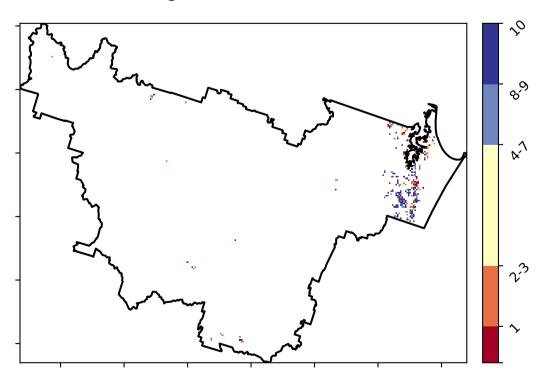
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)





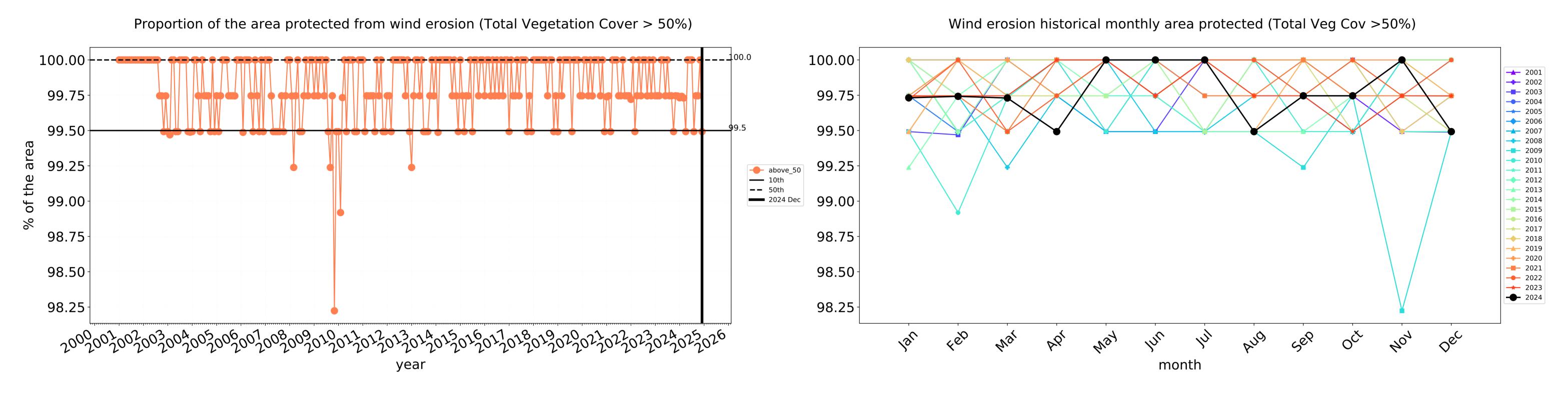


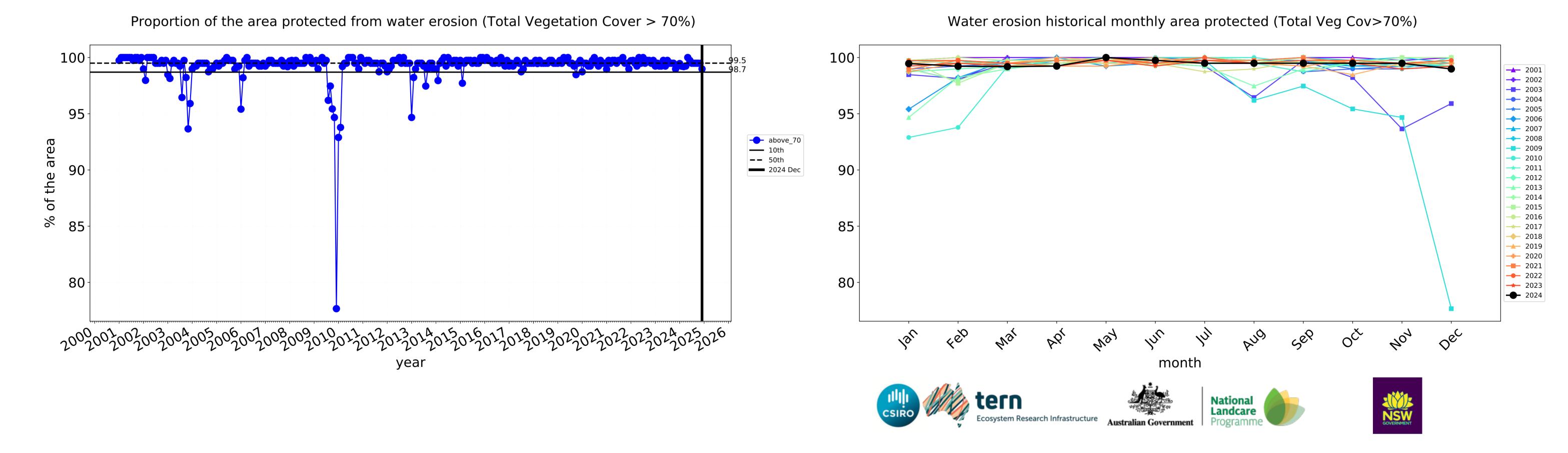


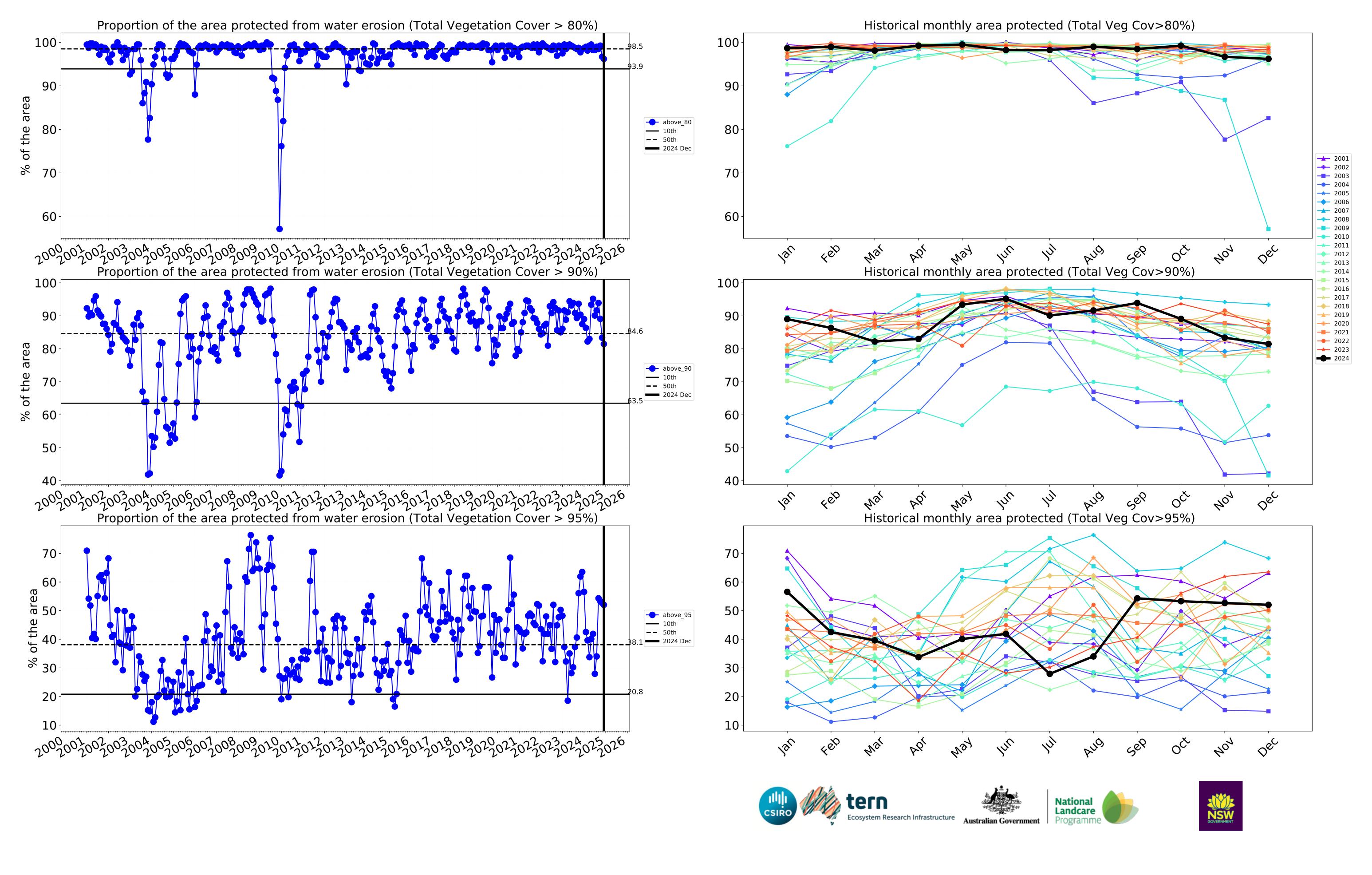




# **Conservation and natural environments non forest timeseries**







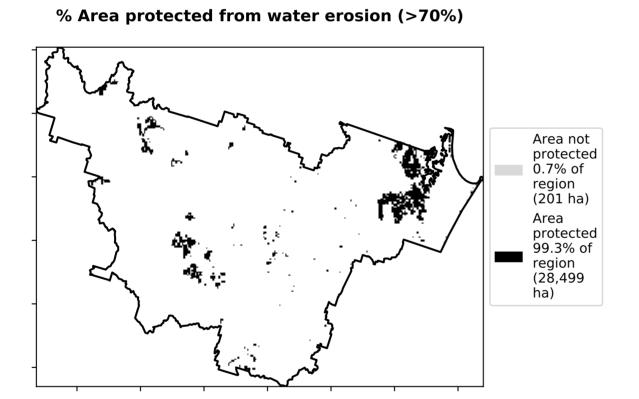
# **Conservation and natural environments Woodland forest**

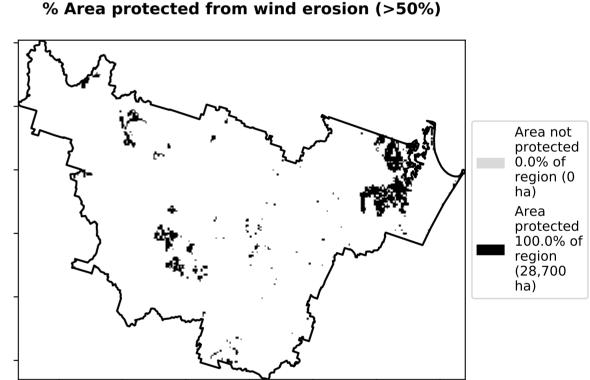
# Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from 1 Conservation and natural environments - Woodland Catchment Scale Land Use of Australia (2018) and Forests of Australia (2018)

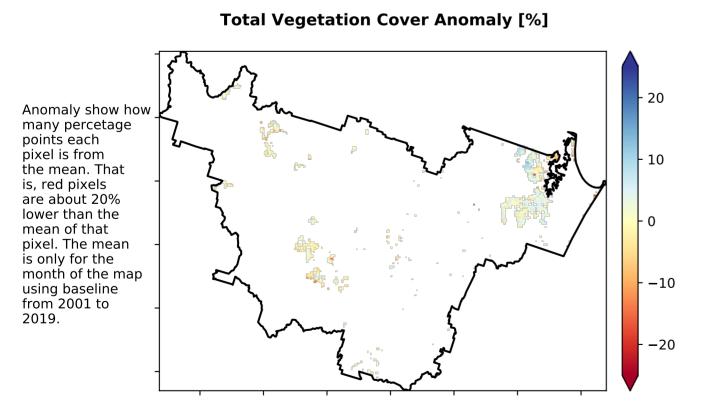
# **Total Vegetation Cover [%]**

# 99.3% 100 80 Area (%) 20 0.1% 0.1% 0-30% 31%-50% 51%-70% 71%-100% **Total Vegetation Cover class**

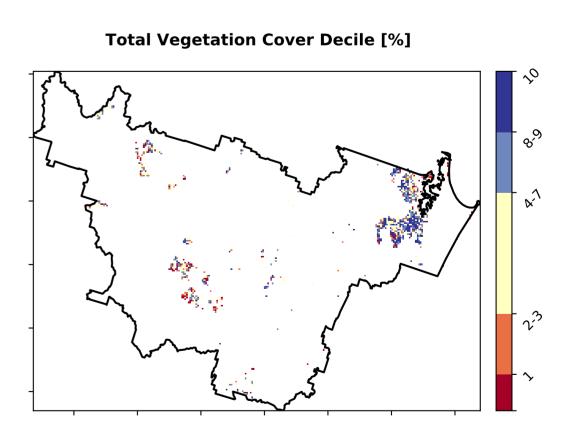
Proportion of vegetation cover class in area







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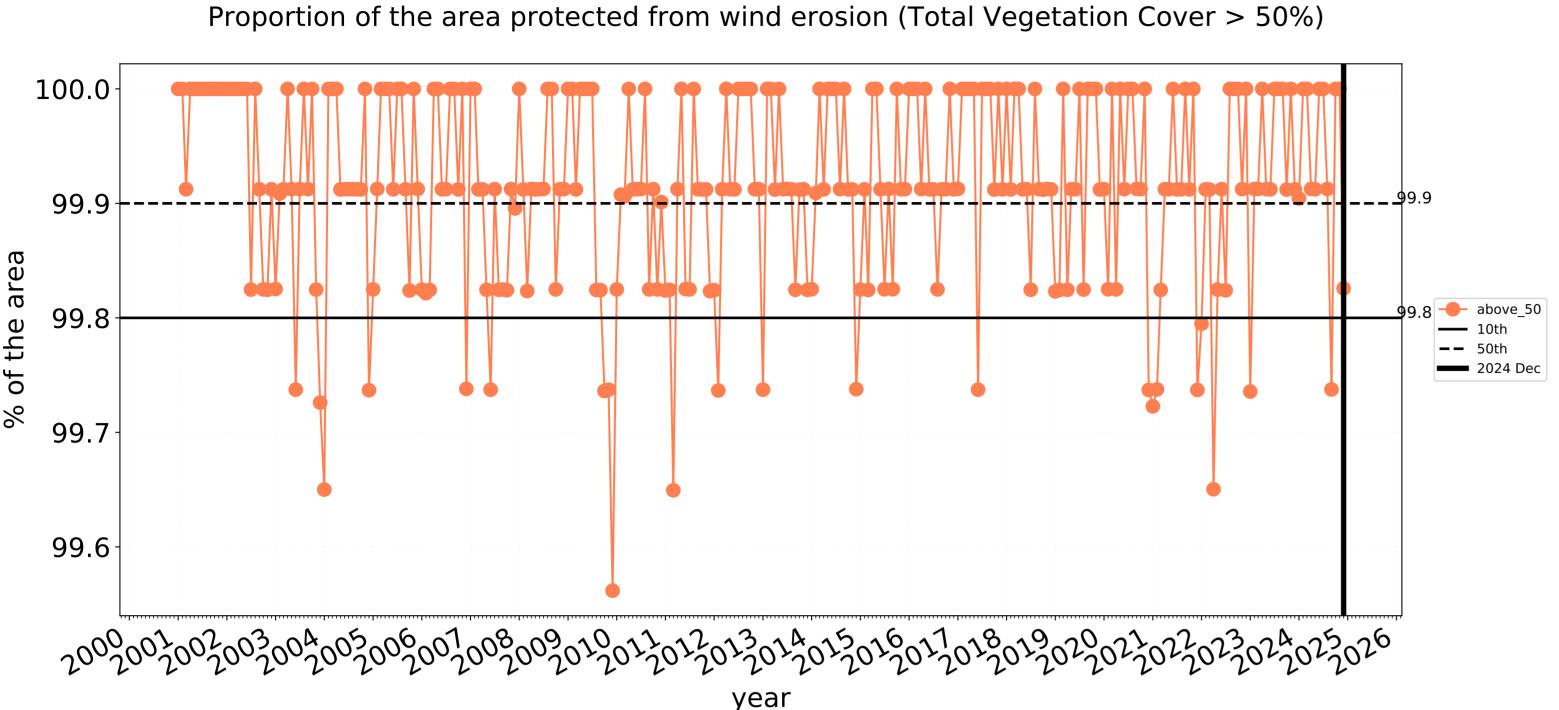


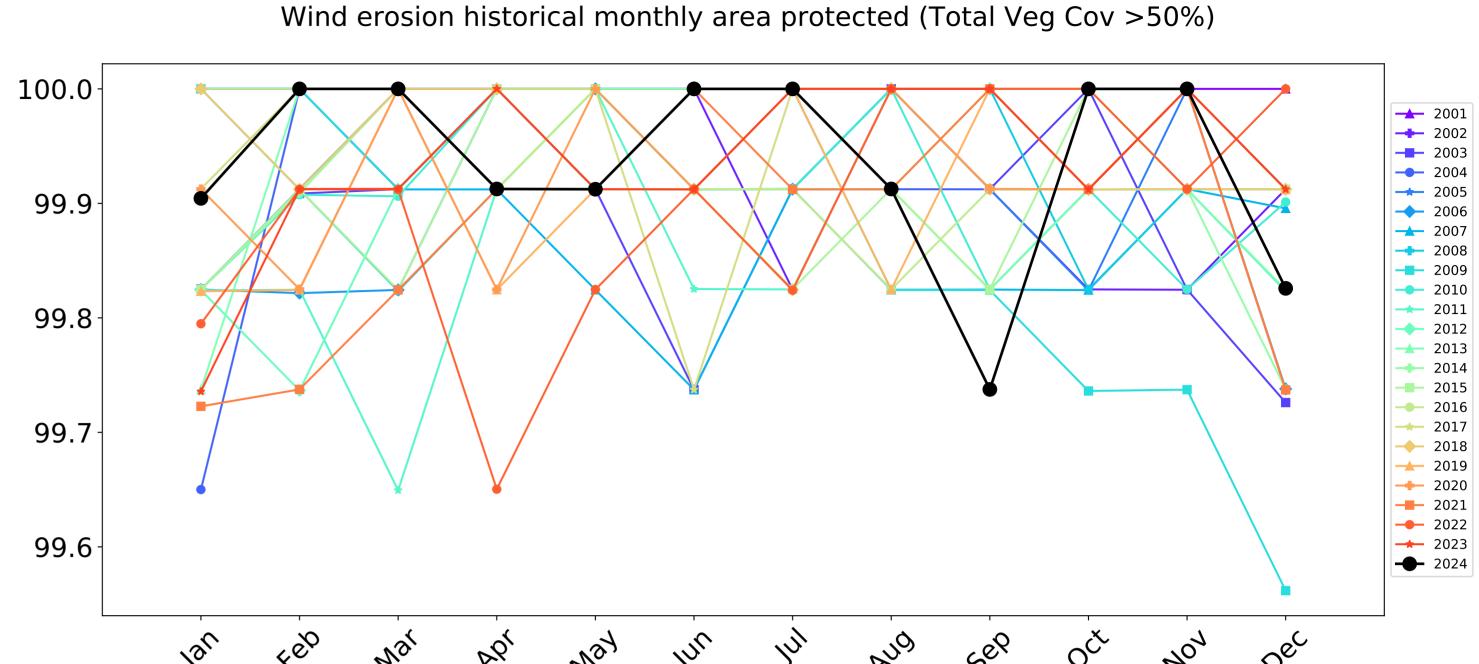






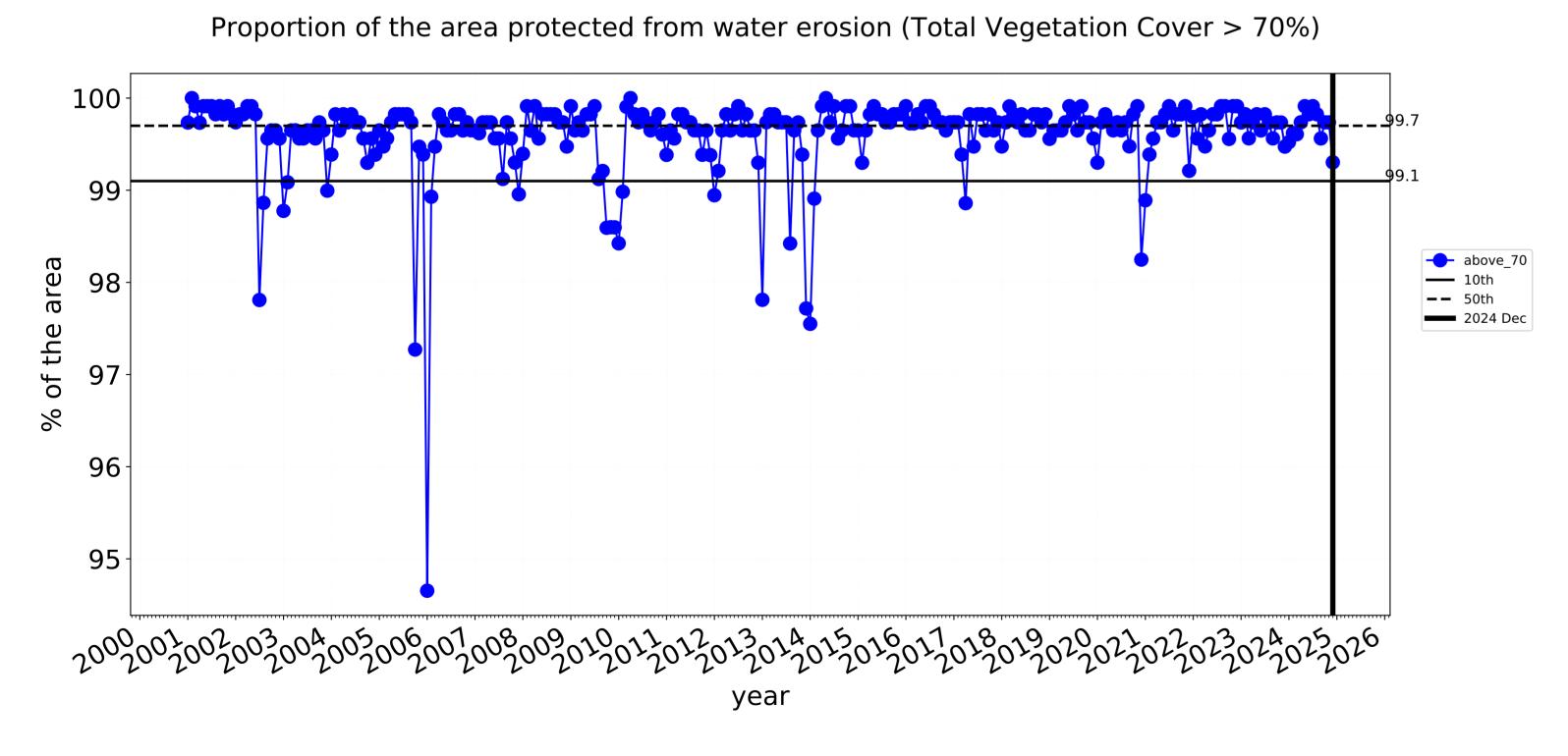
# **Conservation and natural environments Woodland forest timeseries**

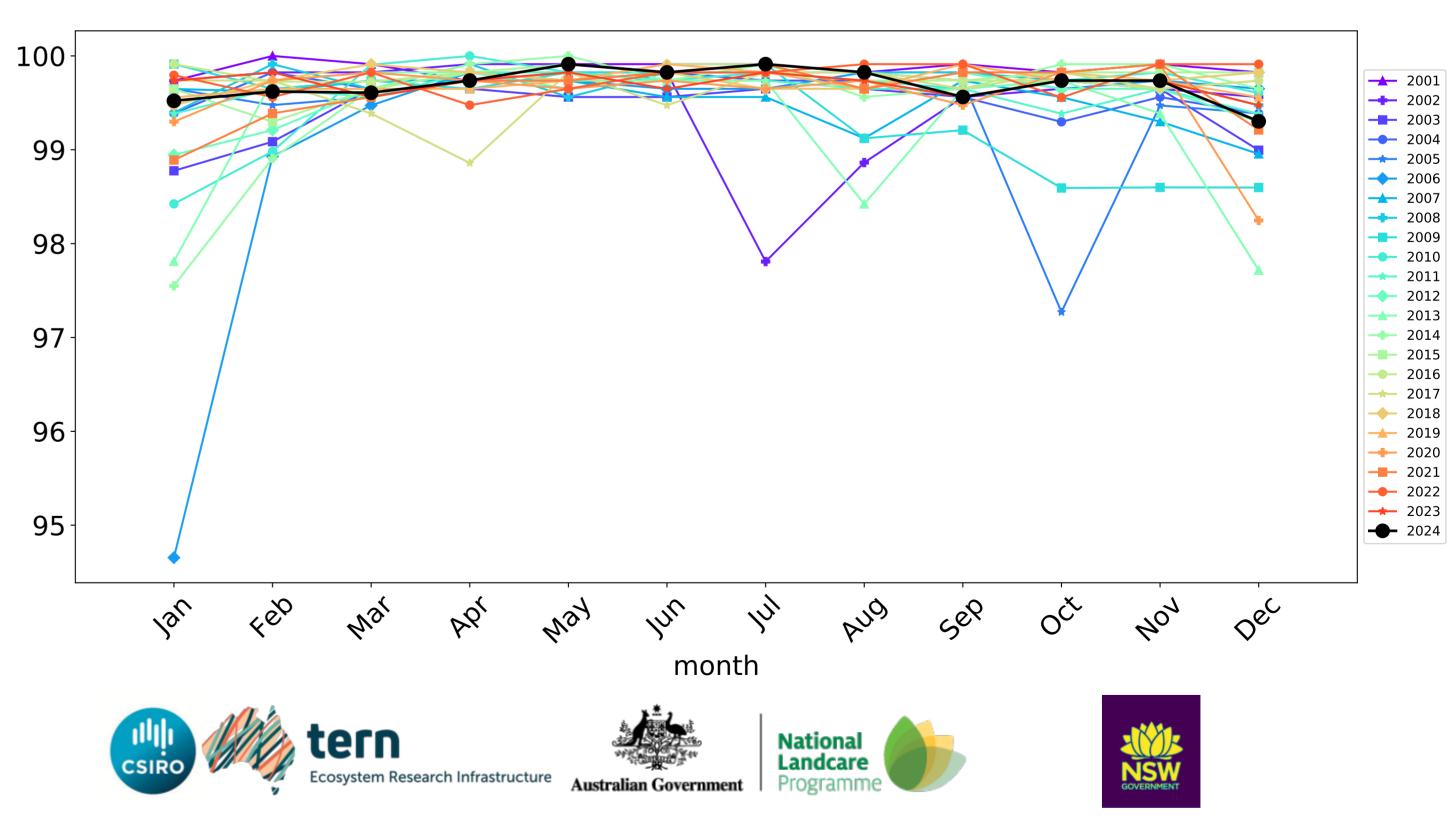


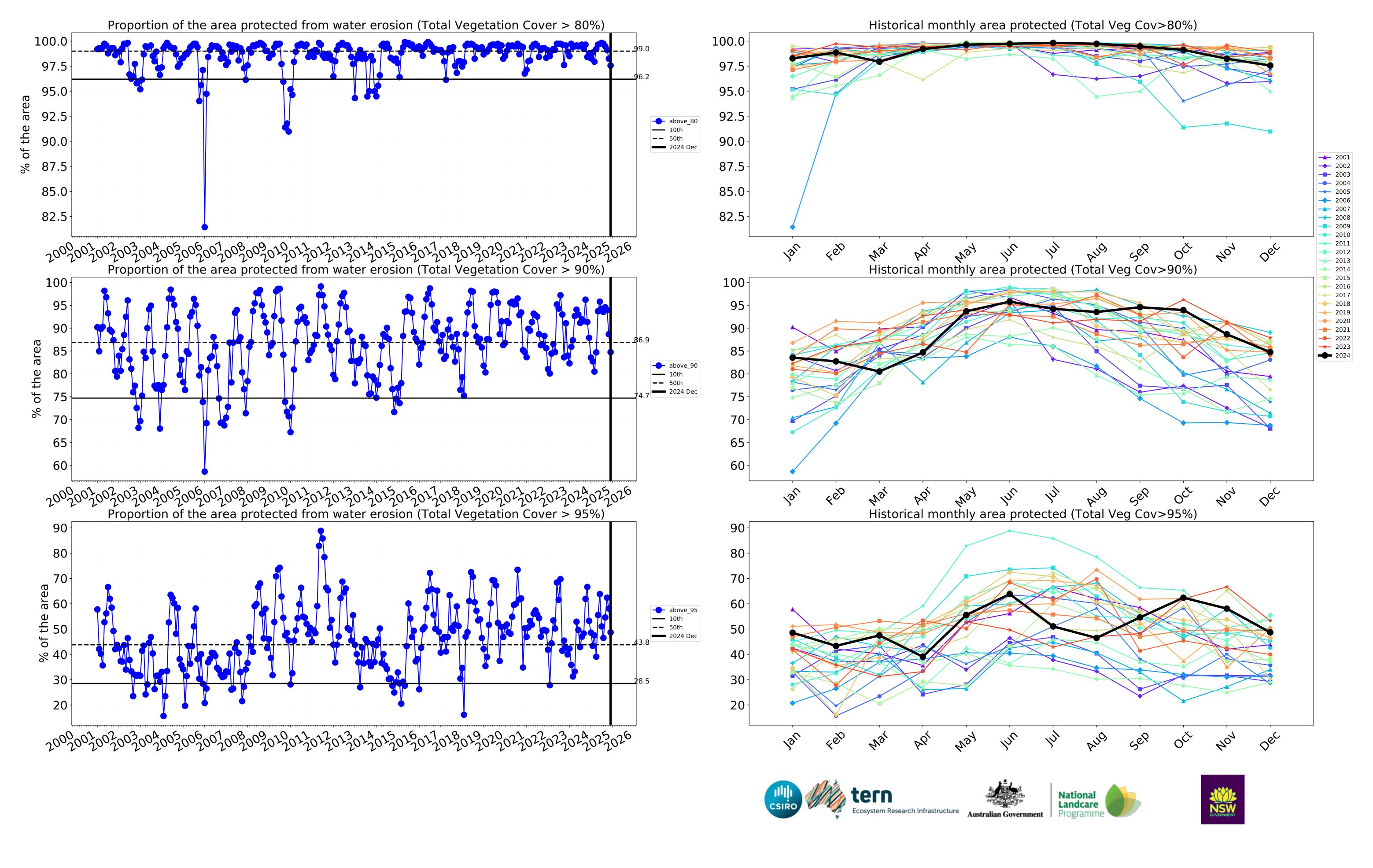


month

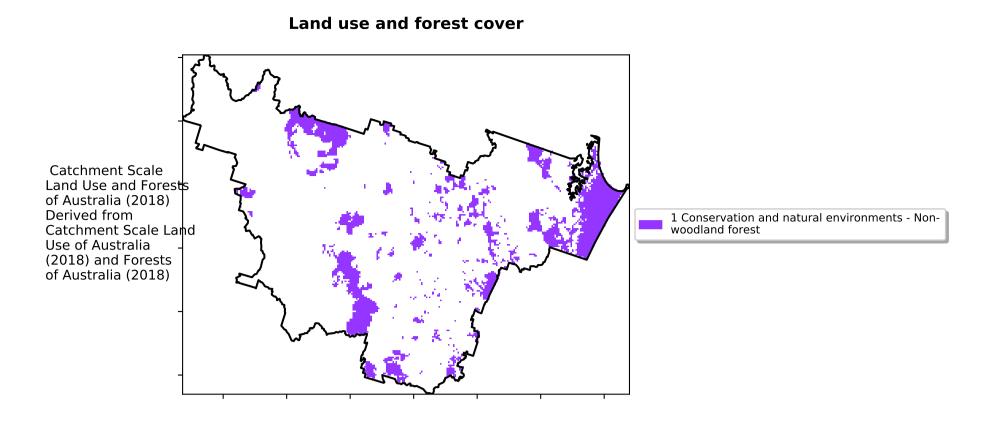
Water erosion historical monthly area protected (Total Veg Cov>70%)



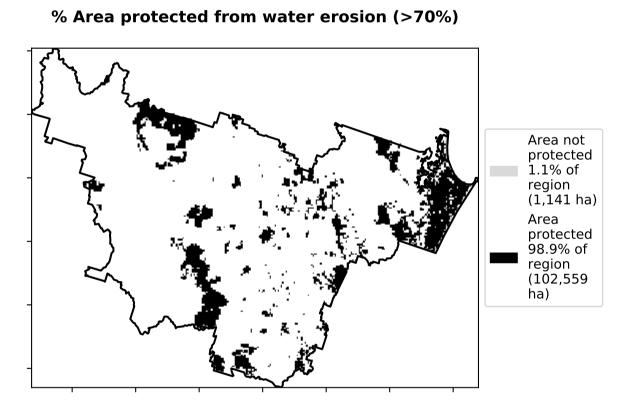


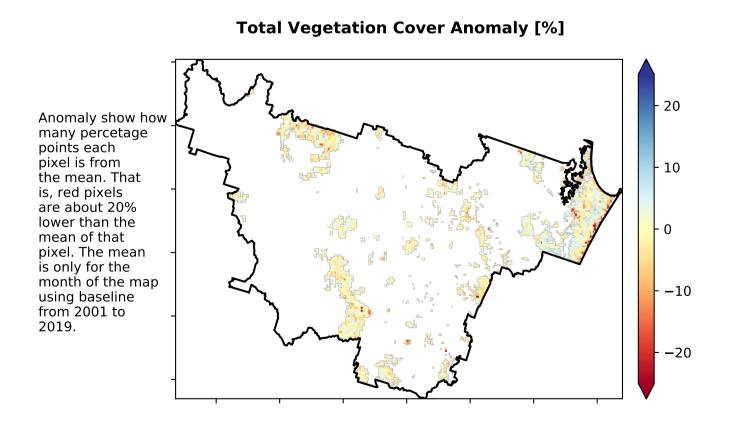


# **Conservation and natural environments Forest (non woodland)**

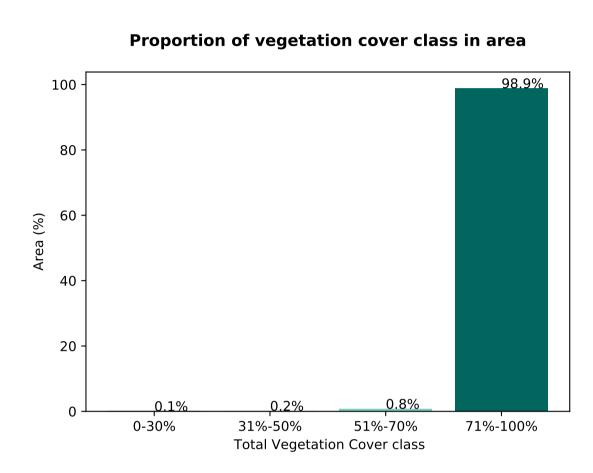


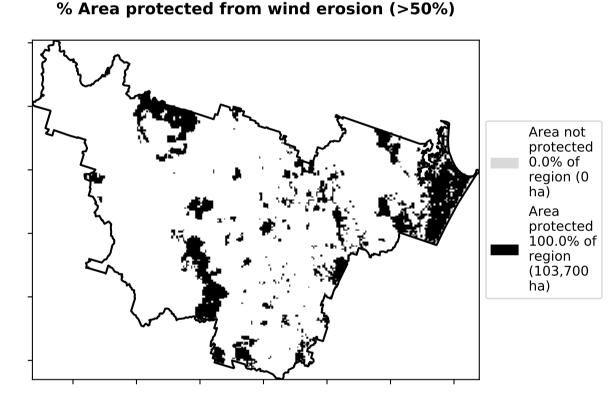
# Total Vegetation Cover [%] Total Vegetation Cover [%] Tuolo Judolo Tu

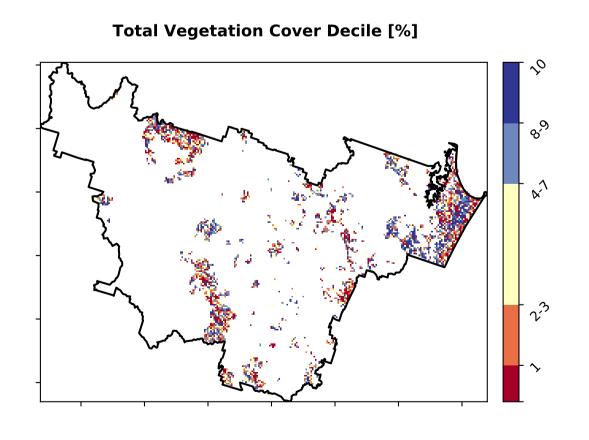




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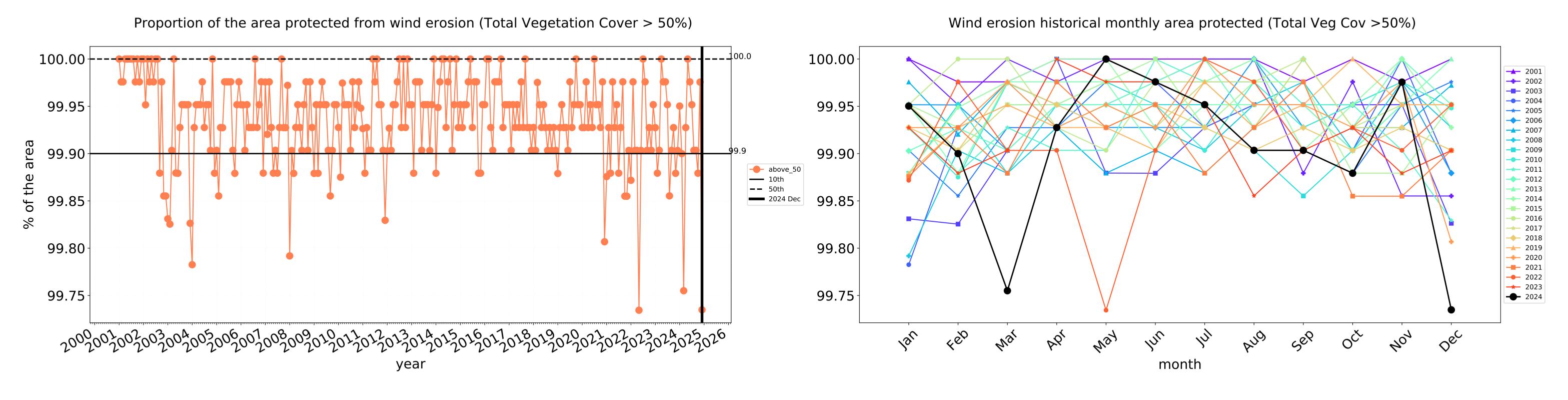


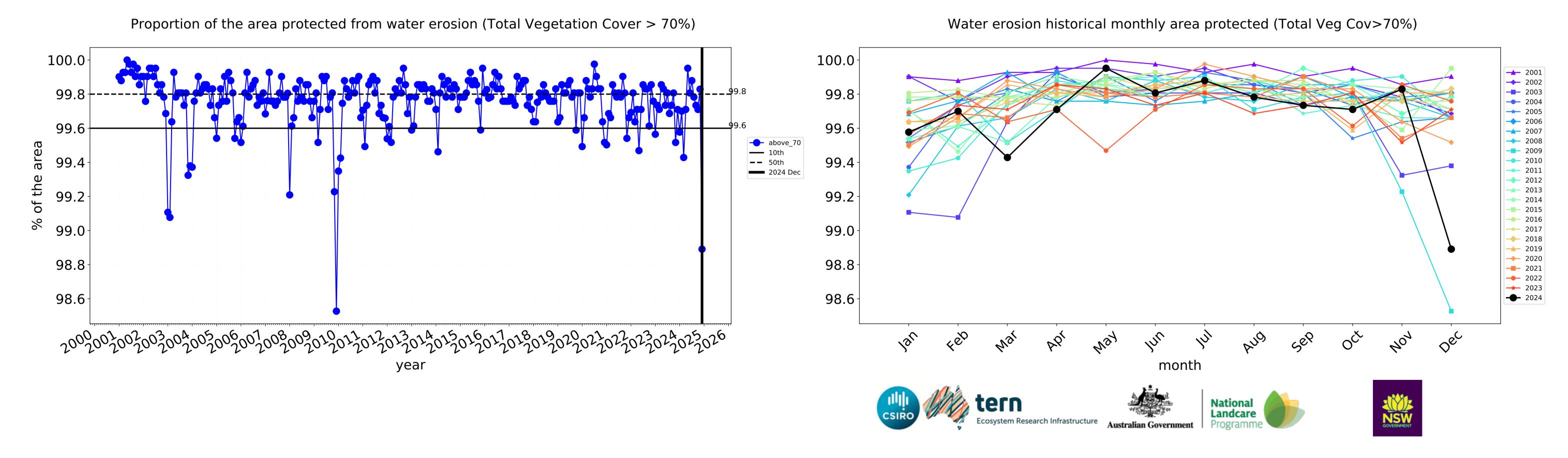


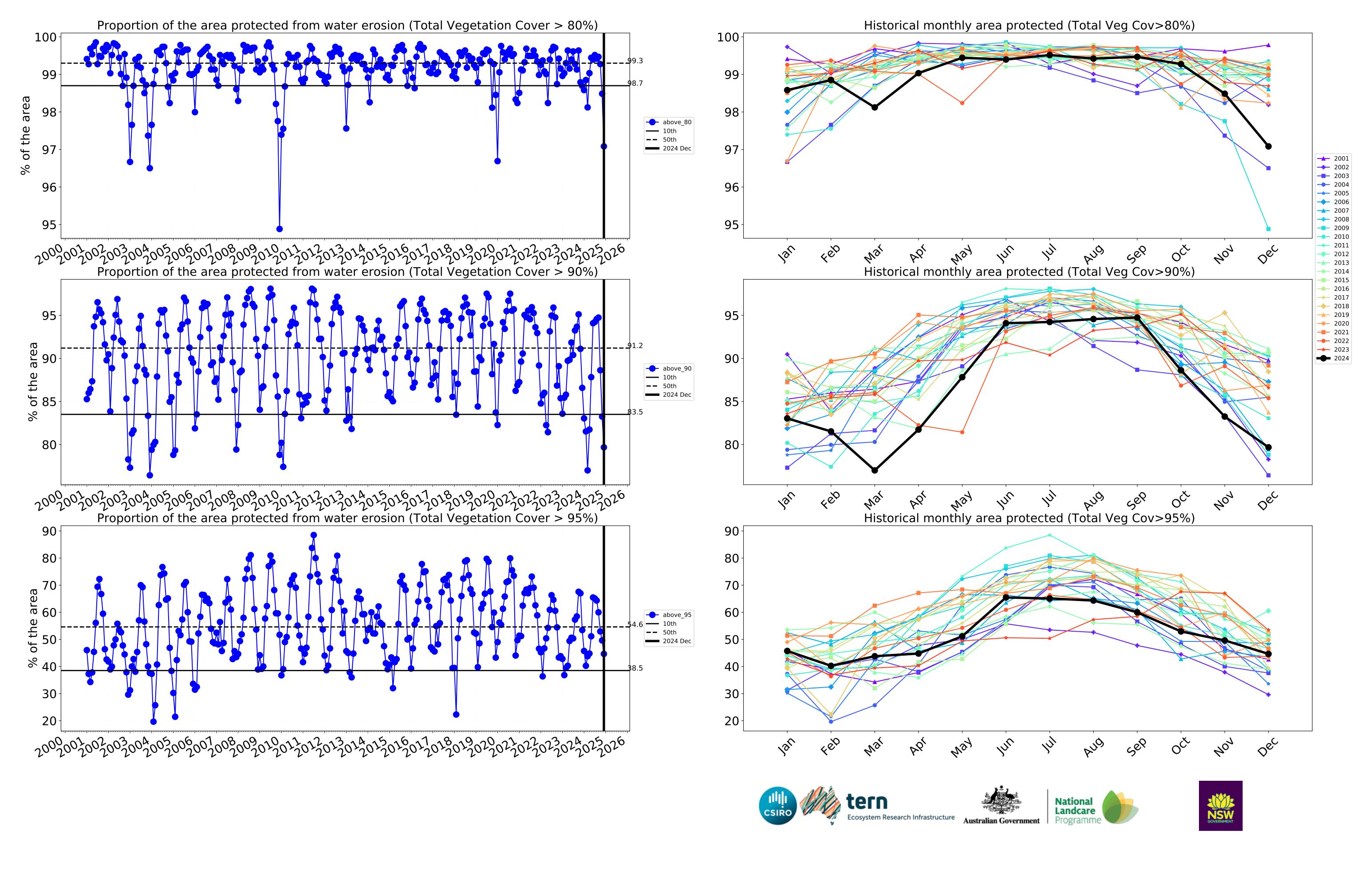






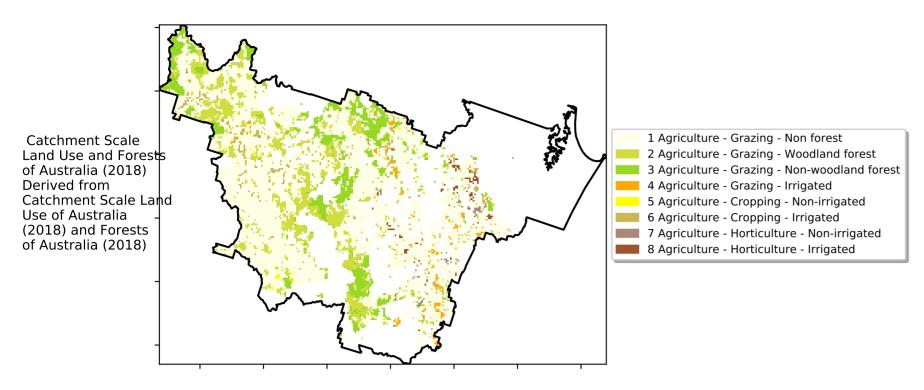




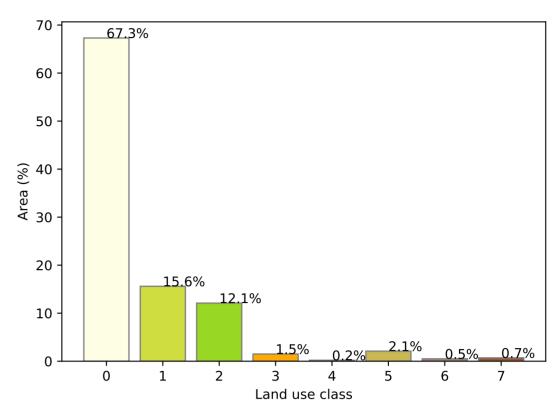


# **Agriculture**

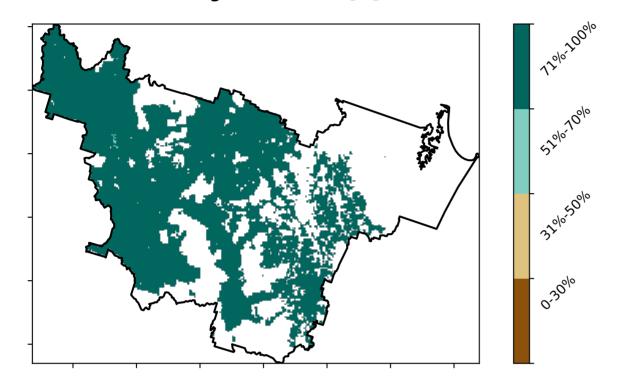
#### Land use and forest cover



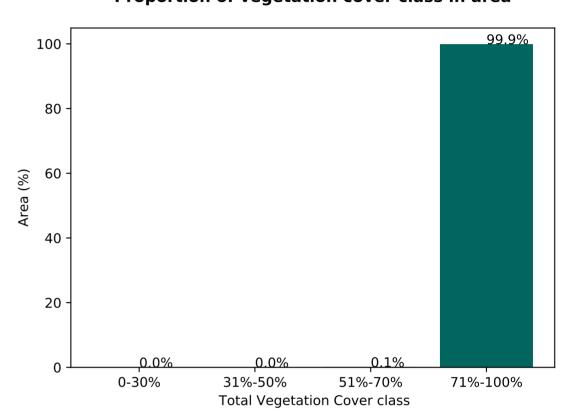
#### Proportion of each land class in area



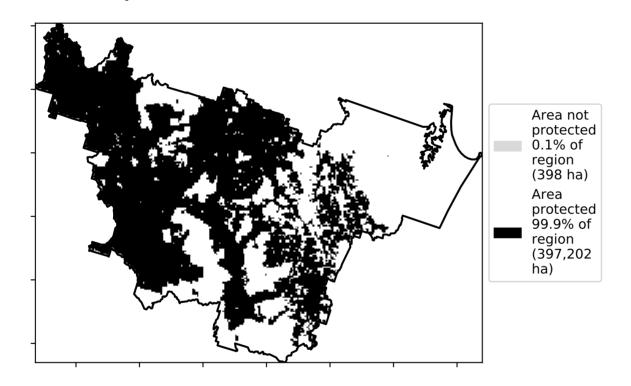
#### **Total Vegetation Cover [%]**



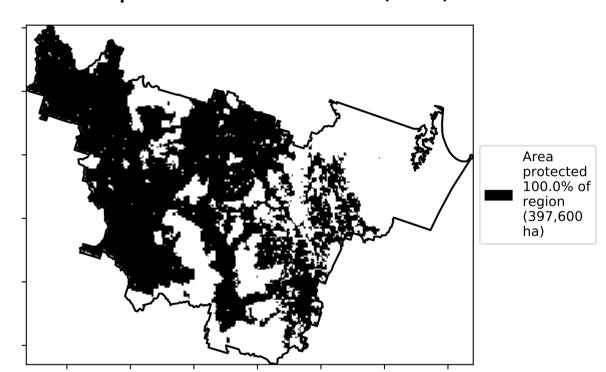
Proportion of vegetation cover class in area



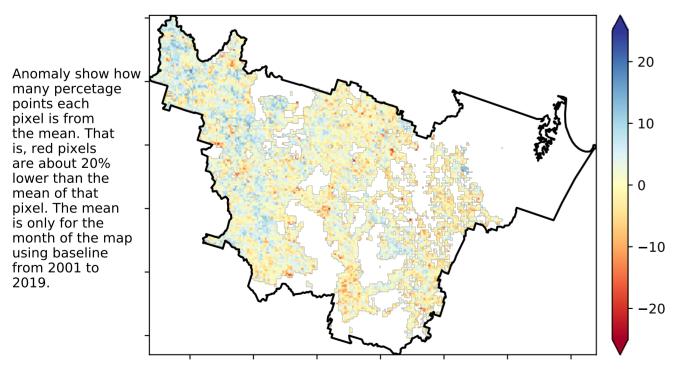
# % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

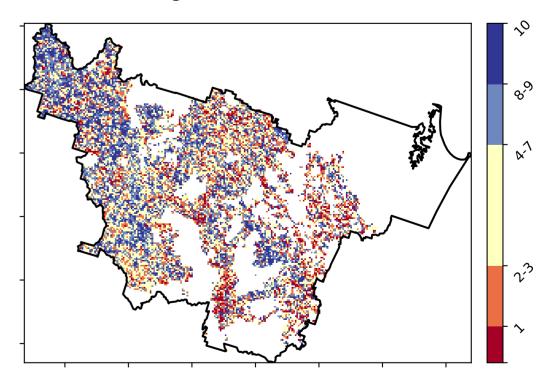


#### **Total Vegetation Cover Anomaly [%]**



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

**Total Vegetation Cover Decile [%]** 



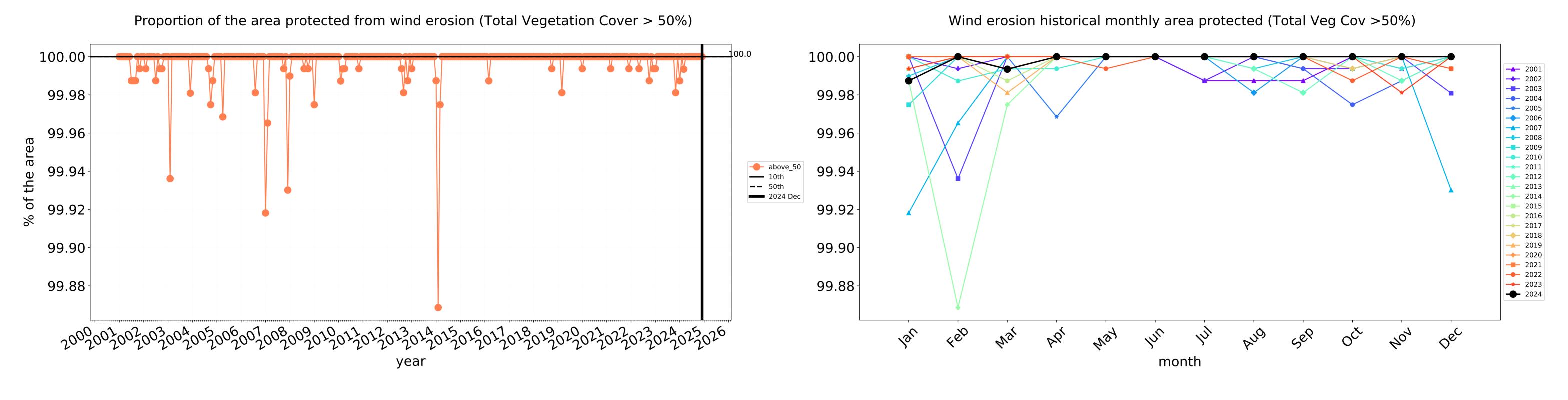


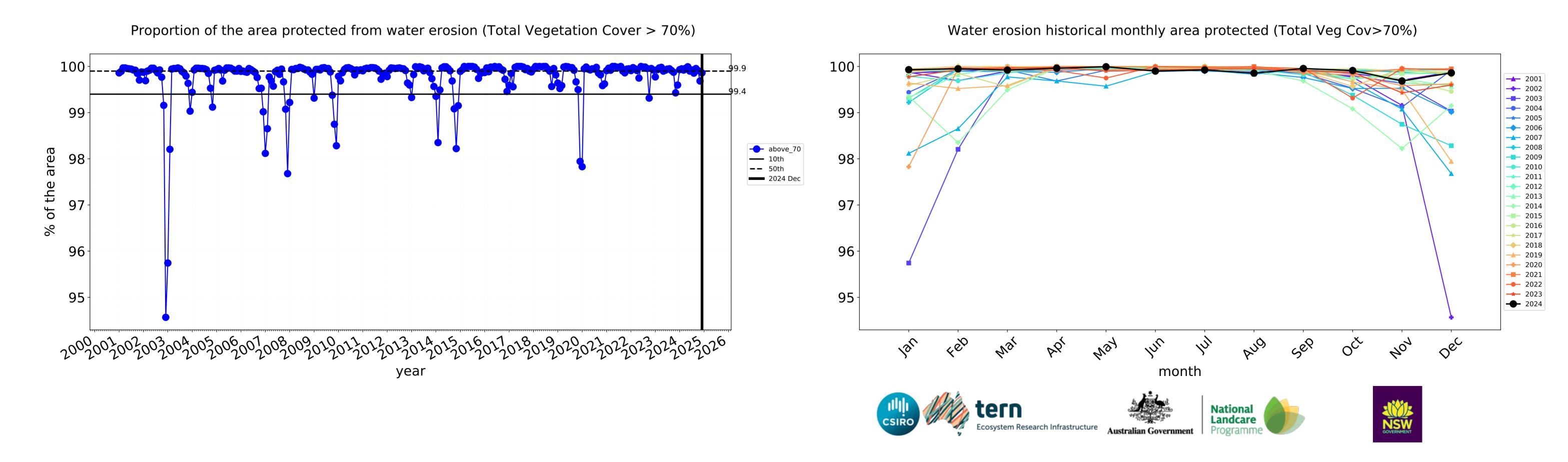


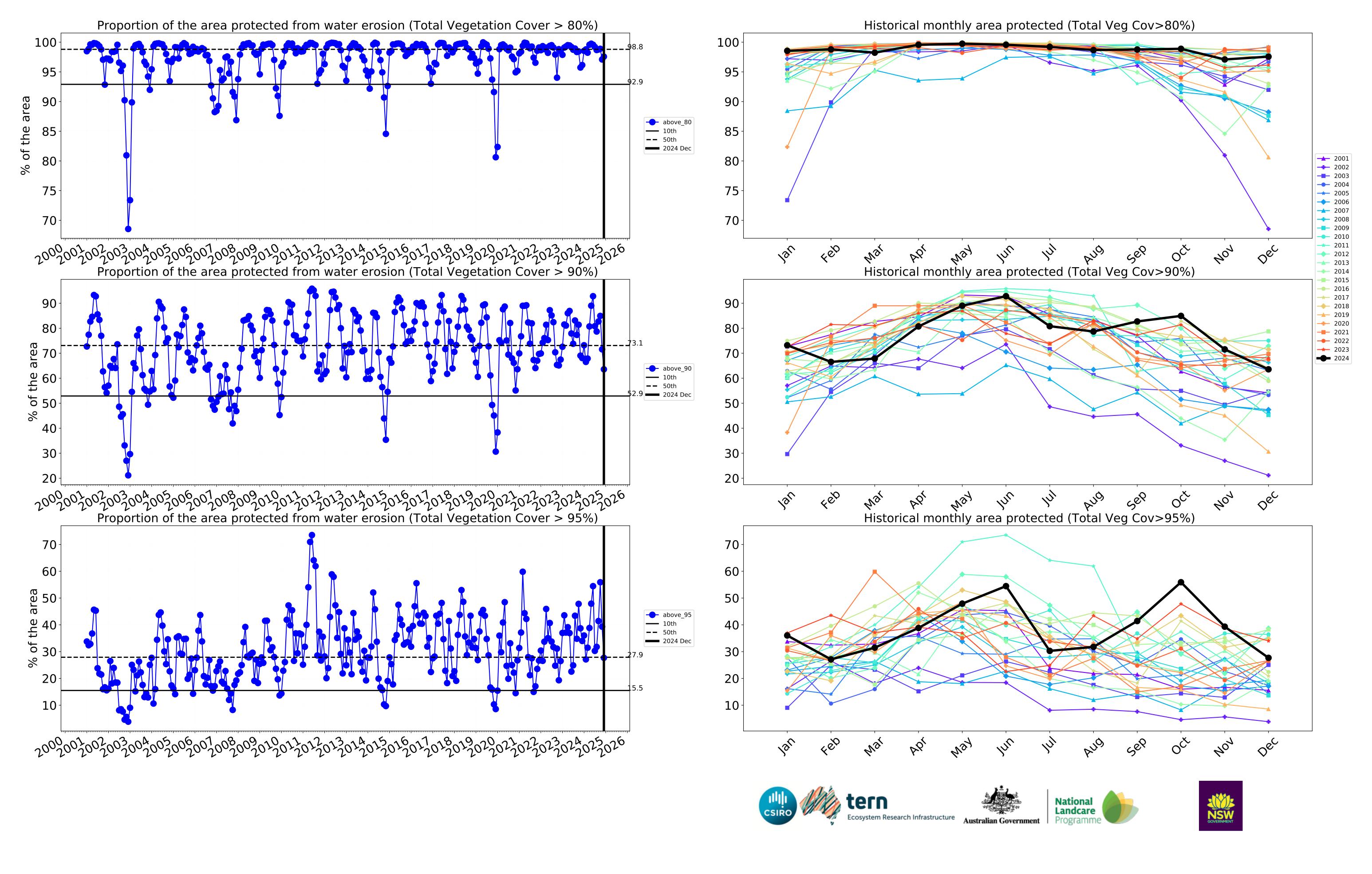




# **Agriculture timeseries**

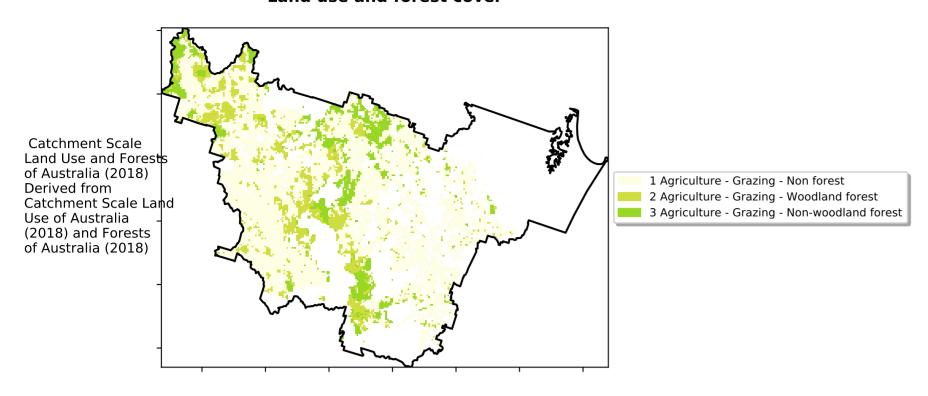




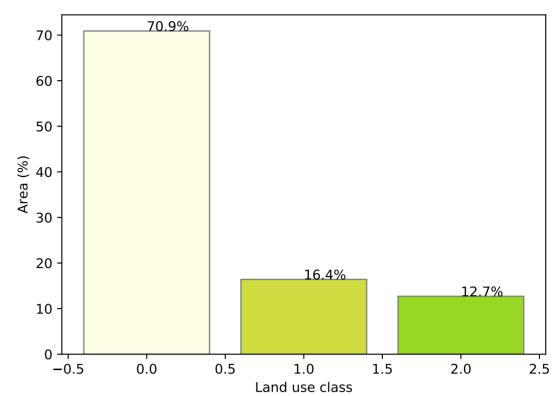


# **Grazing**

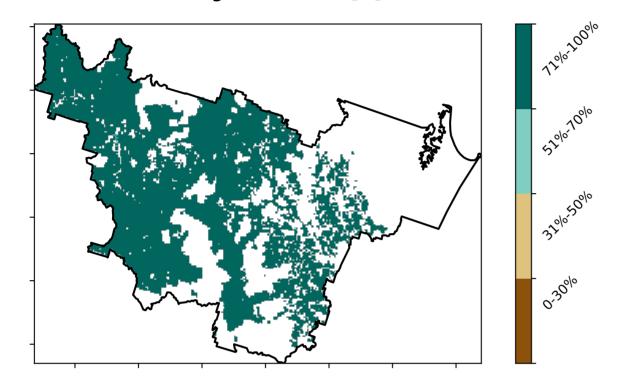
#### Land use and forest cover



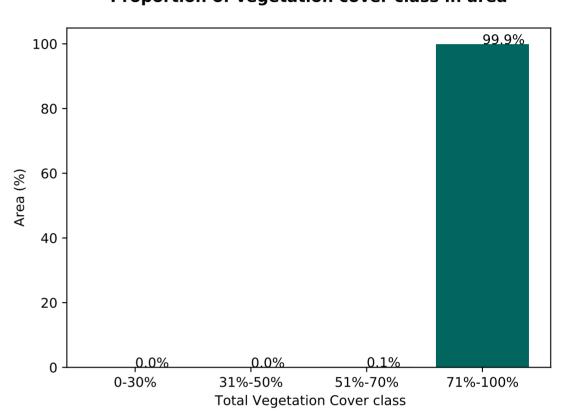
### Proportion of each land class in area



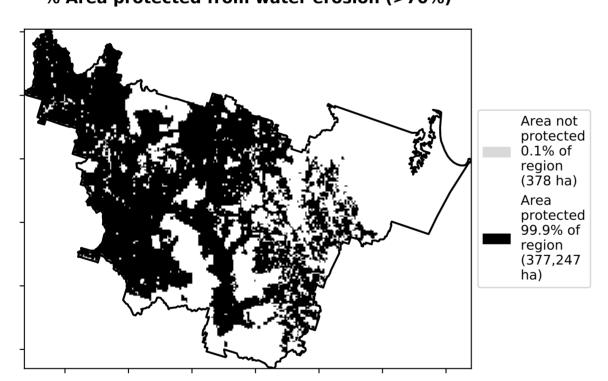
#### **Total Vegetation Cover [%]**



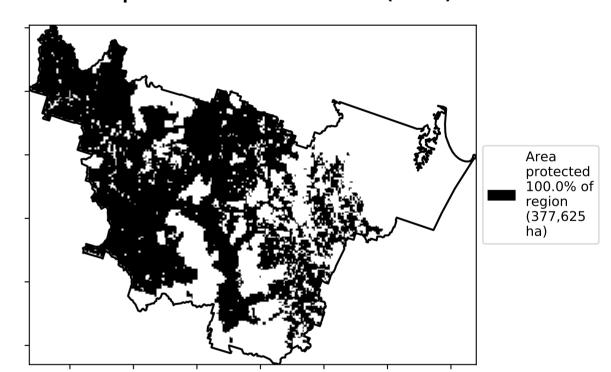
Proportion of vegetation cover class in area



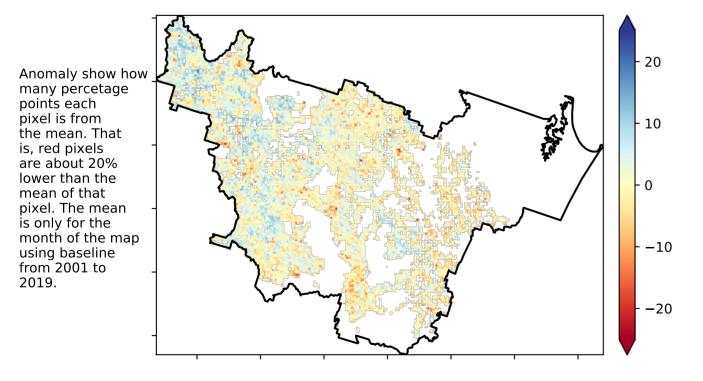
# % Area protected from water erosion (>70%)



% Area protected from wind erosion (>50%)

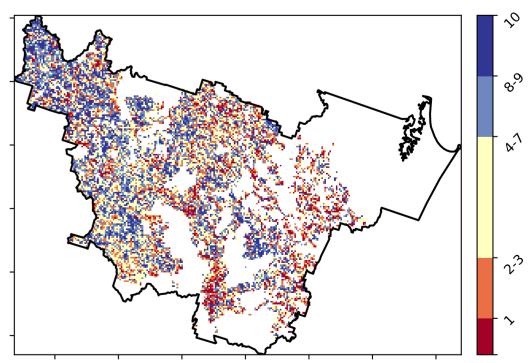


#### **Total Vegetation Cover Anomaly [%]**



Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

Total Vegetation Cover Decile [%]



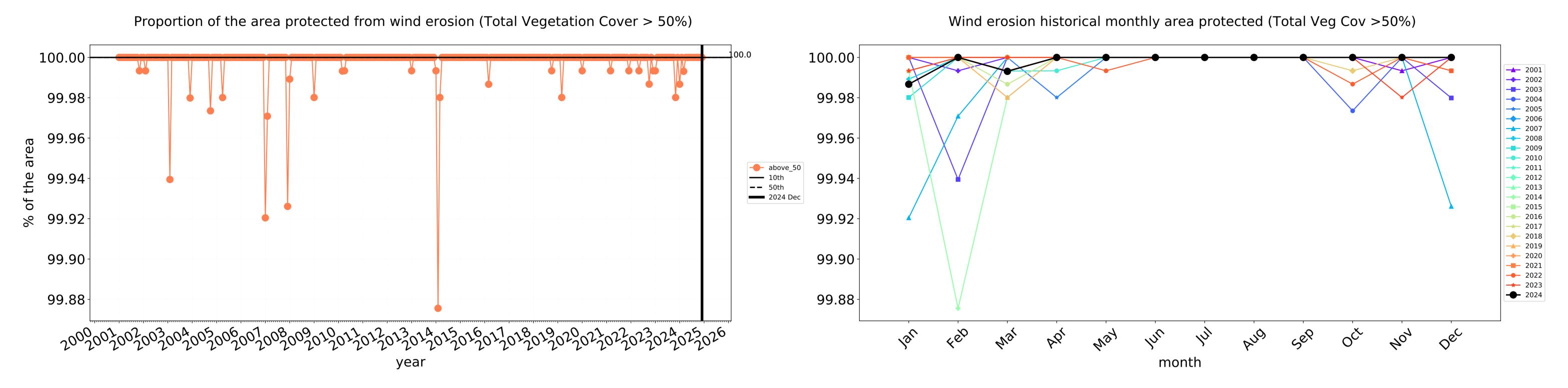


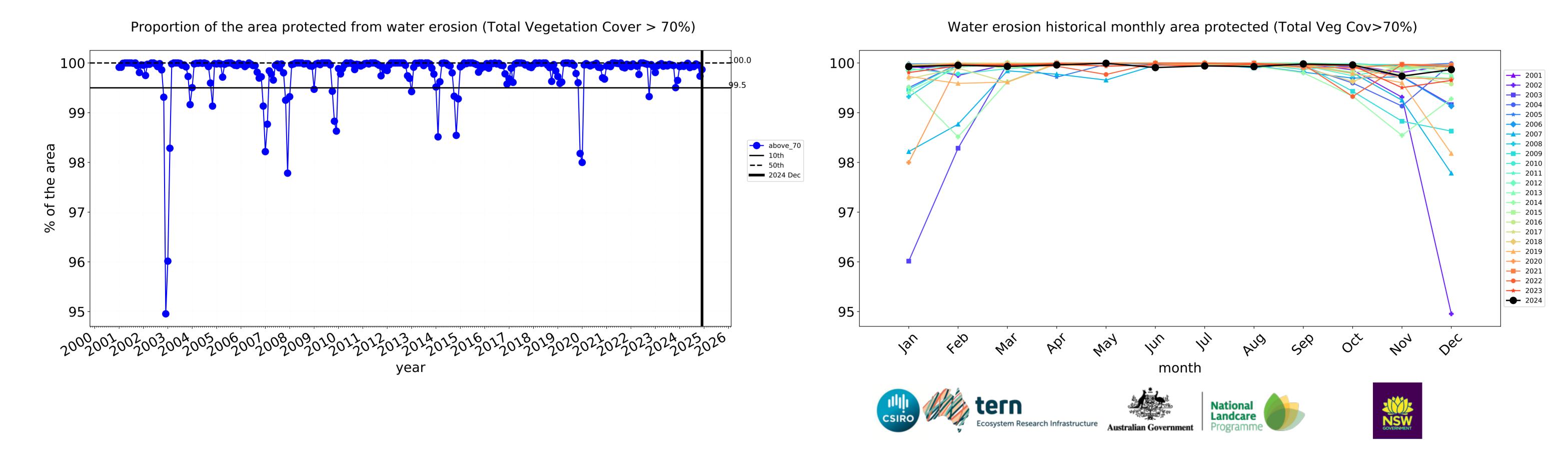


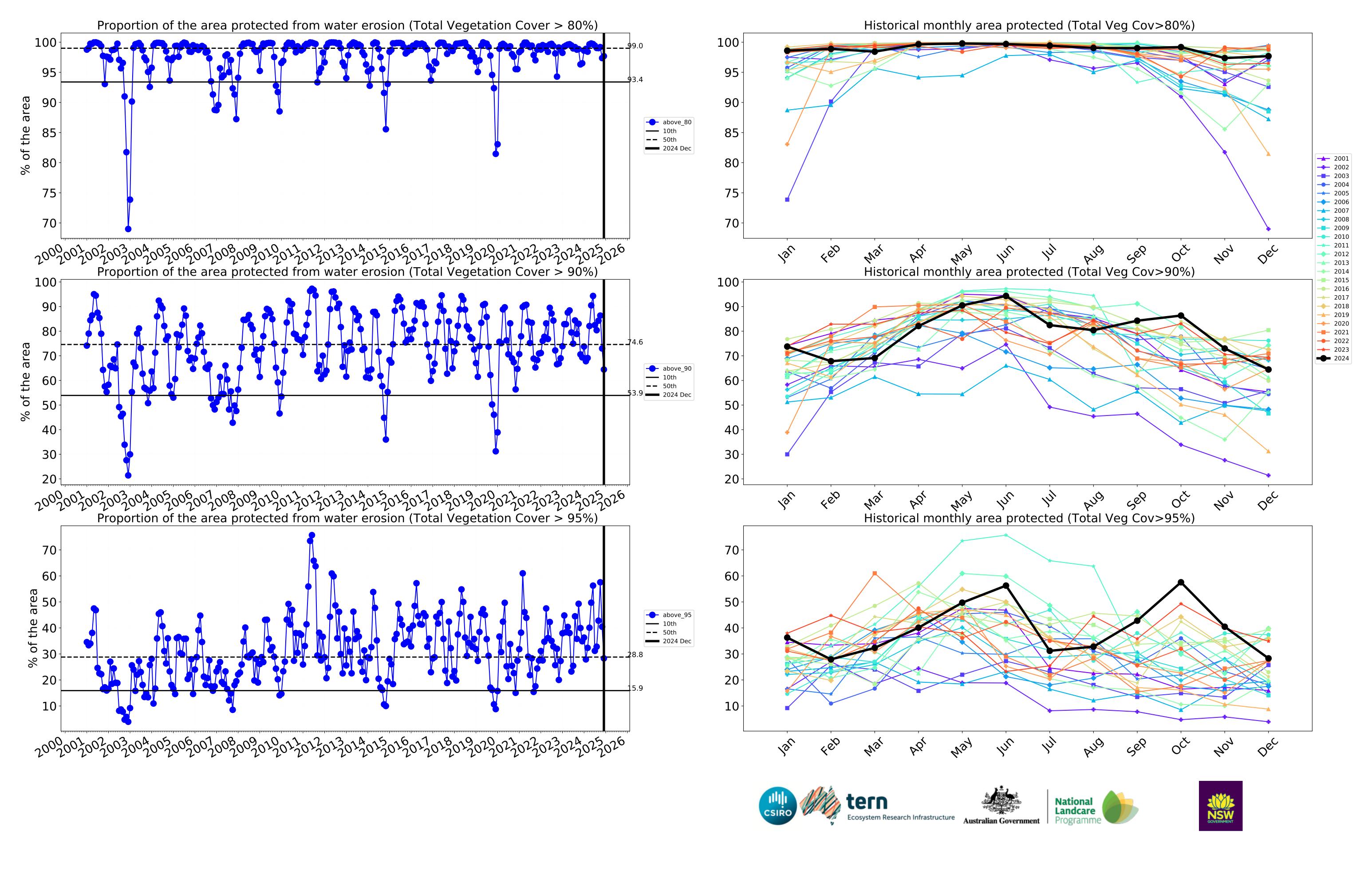




# **Grazing timeseries**

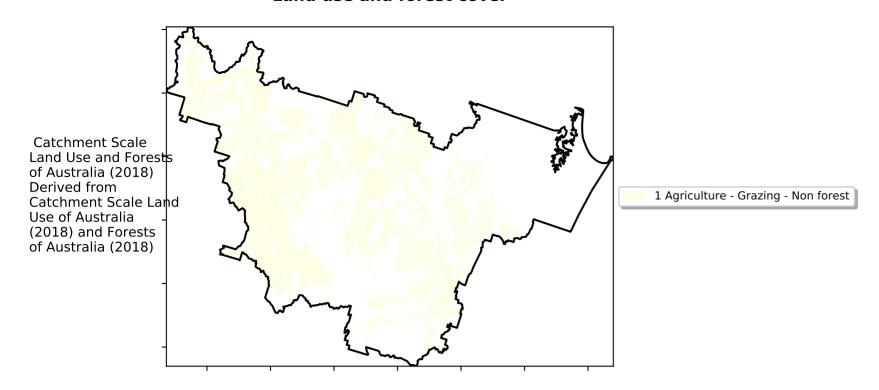




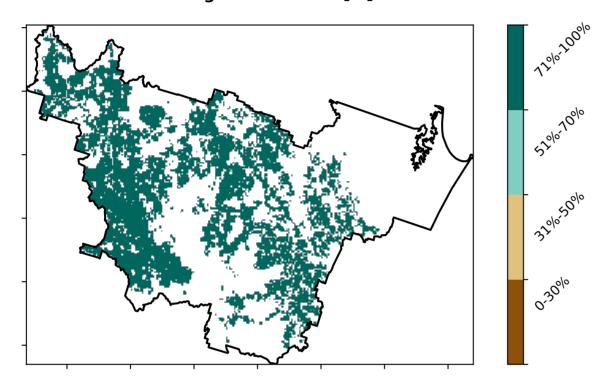


# **Grazing non forest**

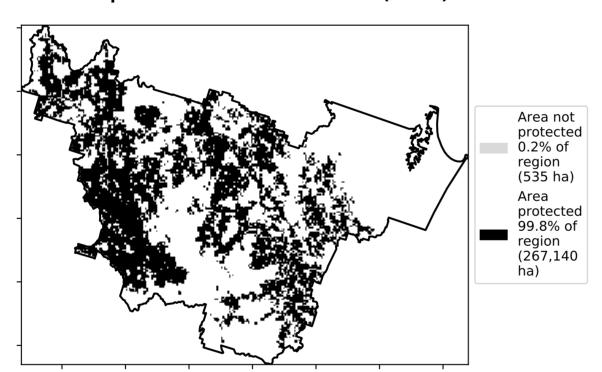
#### Land use and forest cover



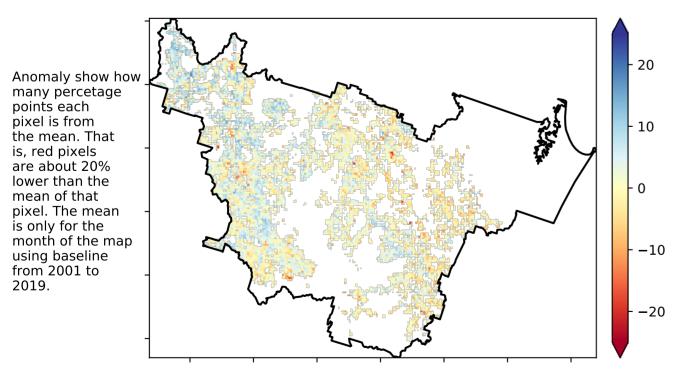
#### Total Vegetation Cover [%]



#### % Area protected from water erosion (>70%)

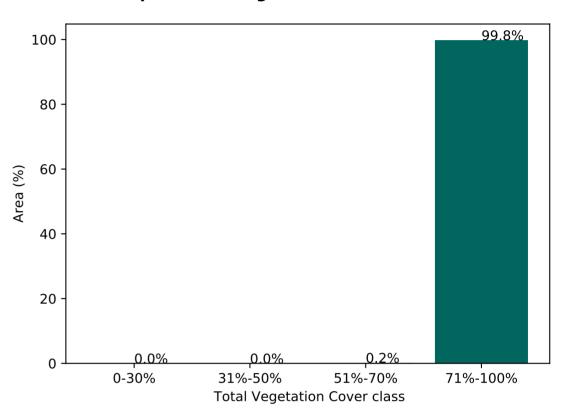


#### Total Vegetation Cover Anomaly [%]

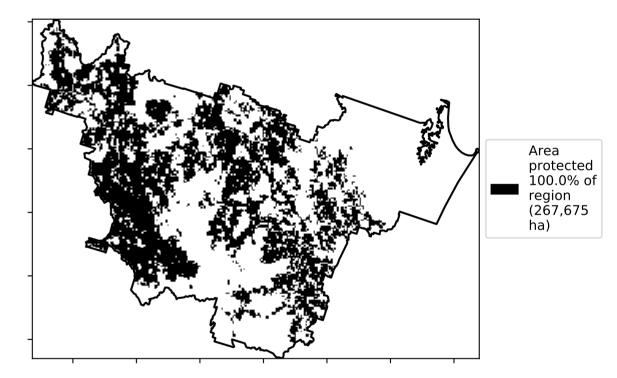


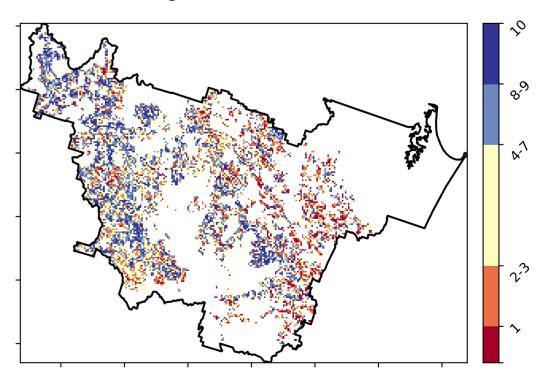
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)





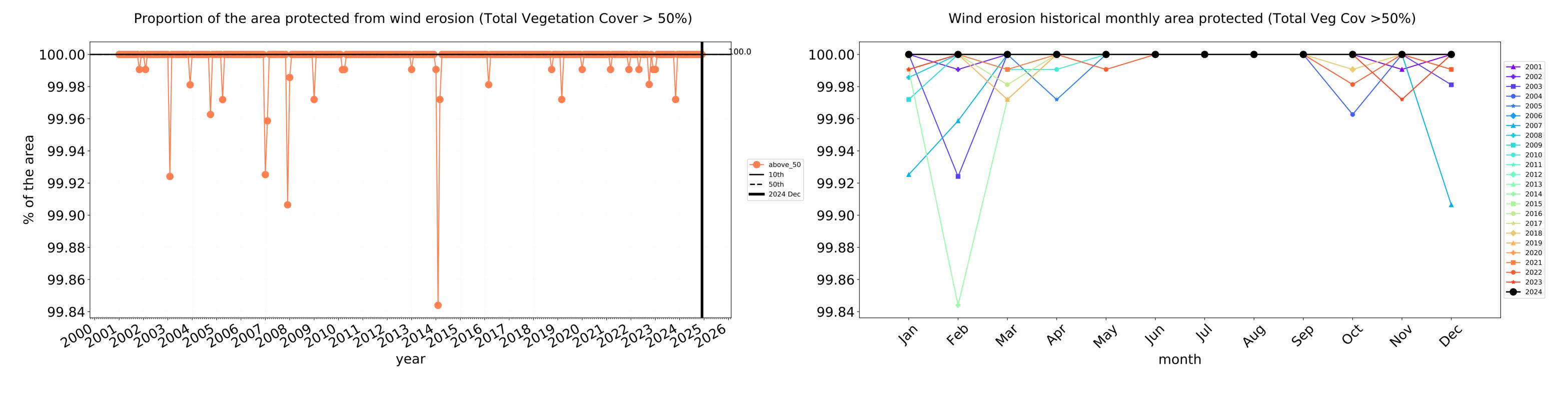


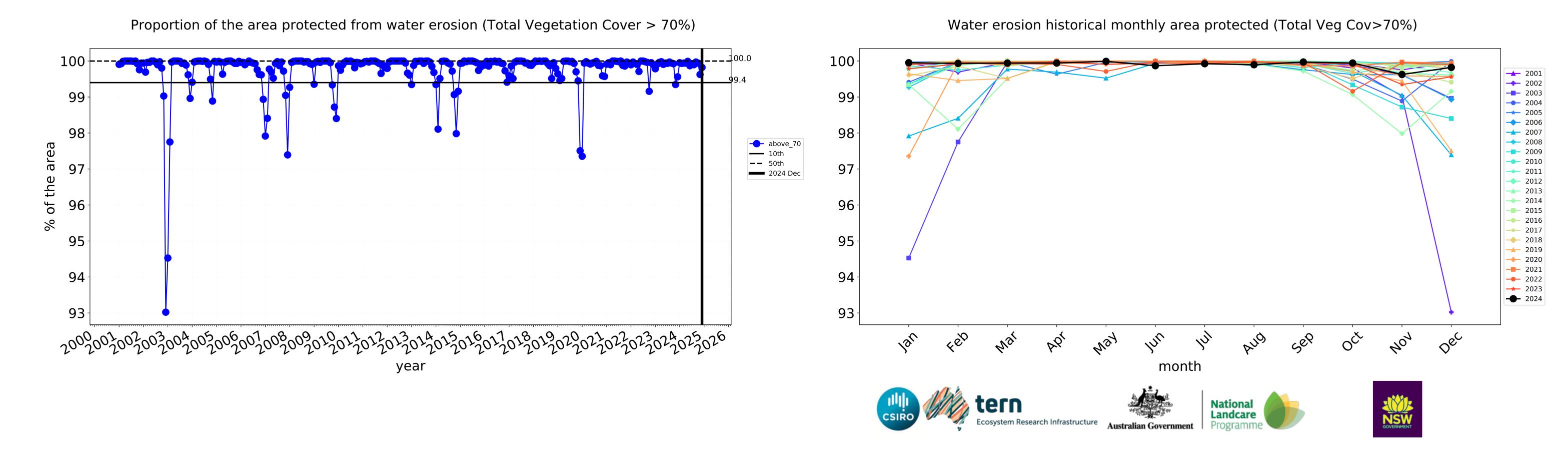


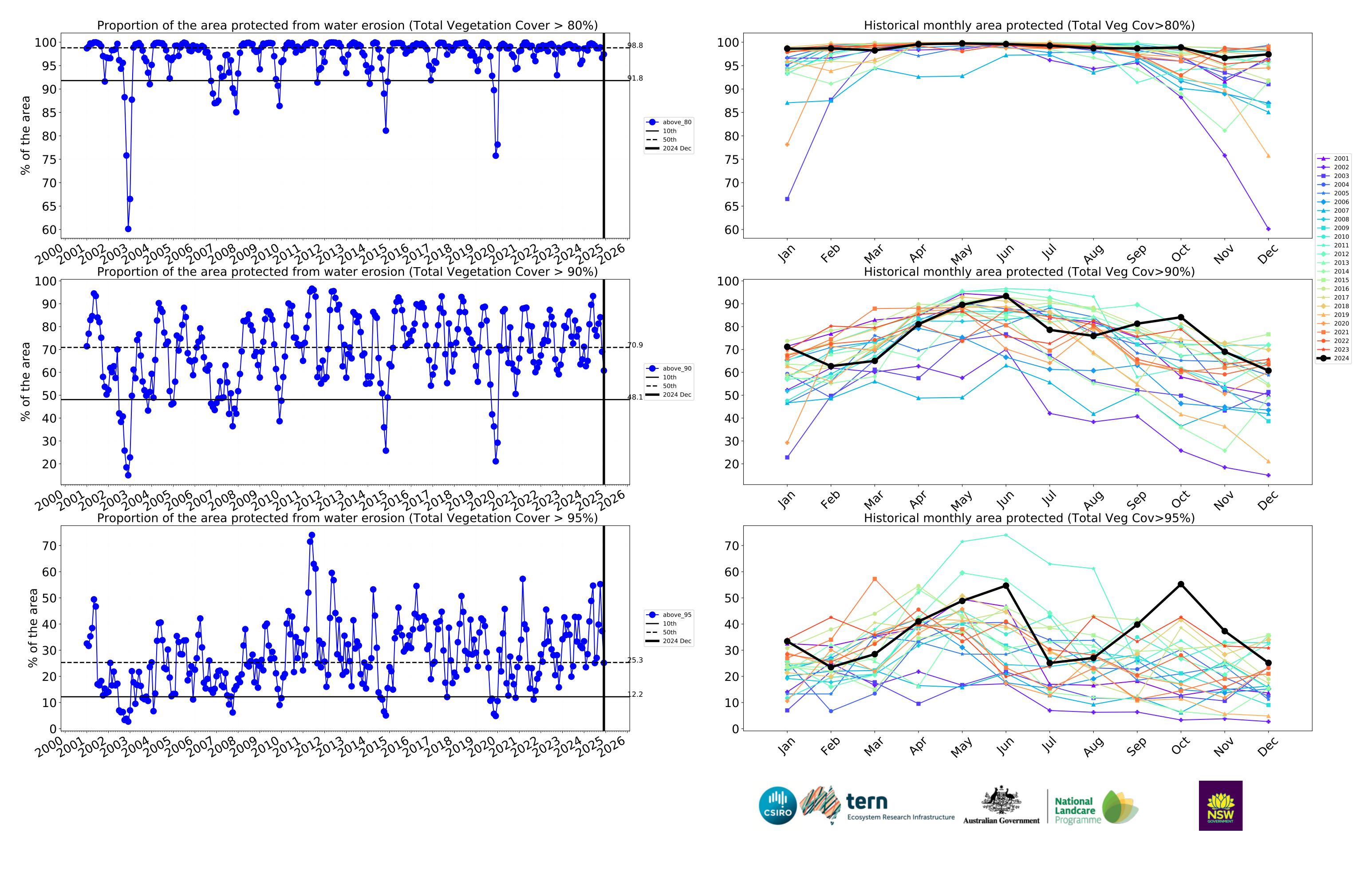




# **Grazing non forest timeseries**

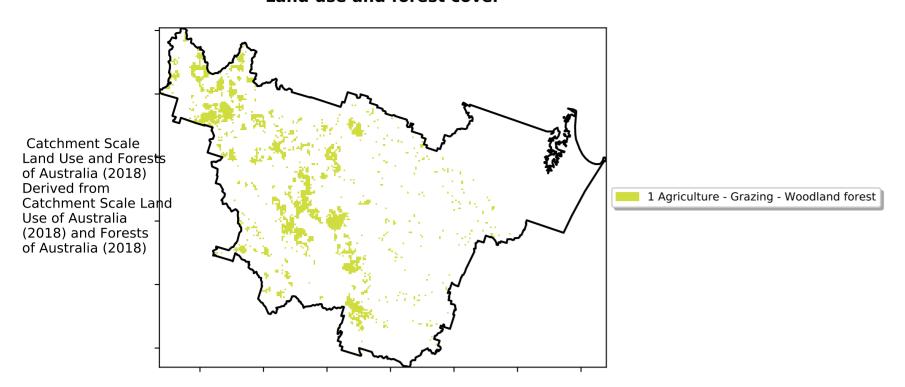




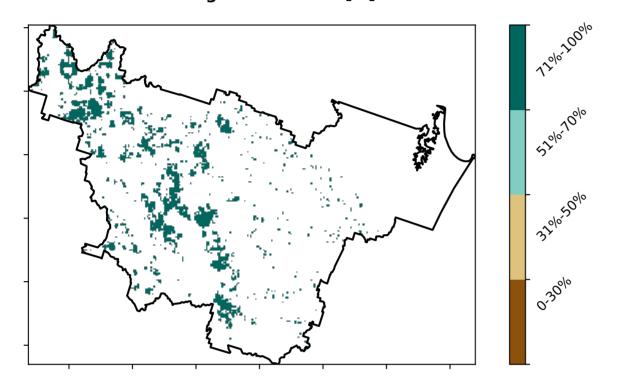


# **Grazing Woodland forest**

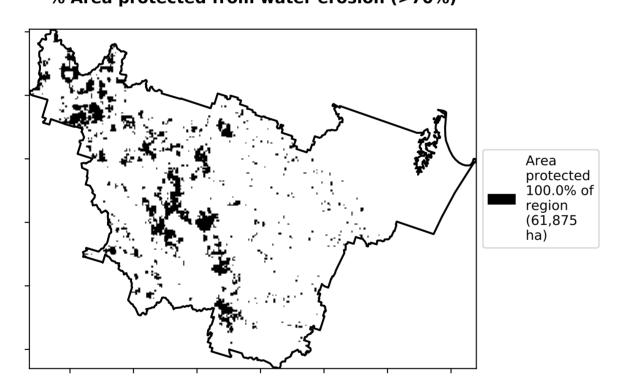
#### Land use and forest cover



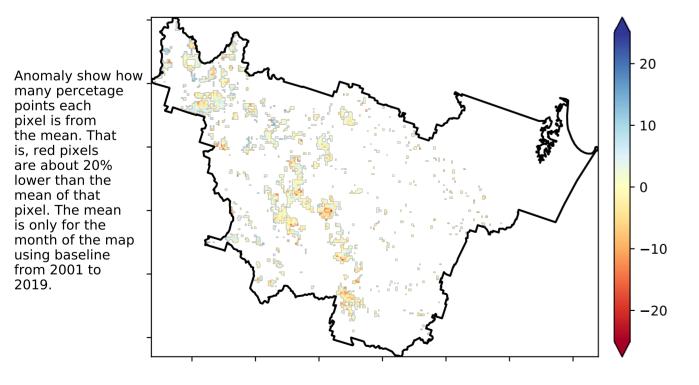
#### Total Vegetation Cover [%]



# % Area protected from water erosion (>70%)

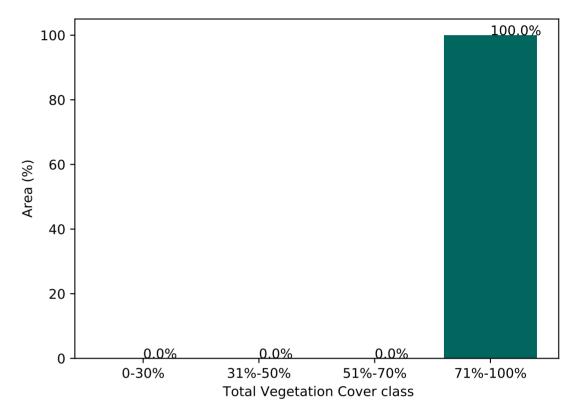


#### Total Vegetation Cover Anomaly [%]

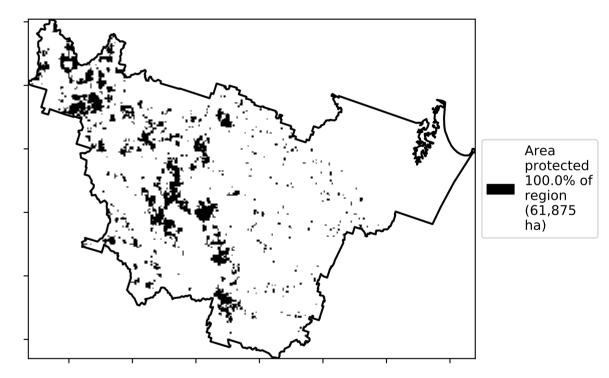


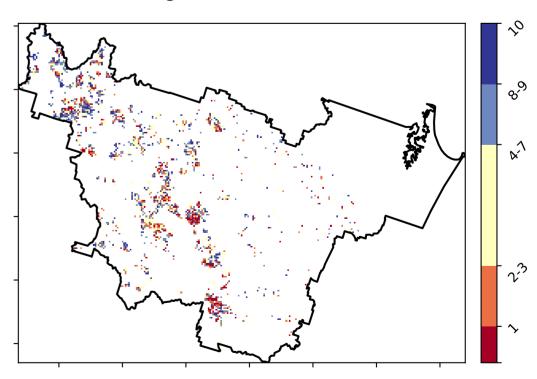
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)





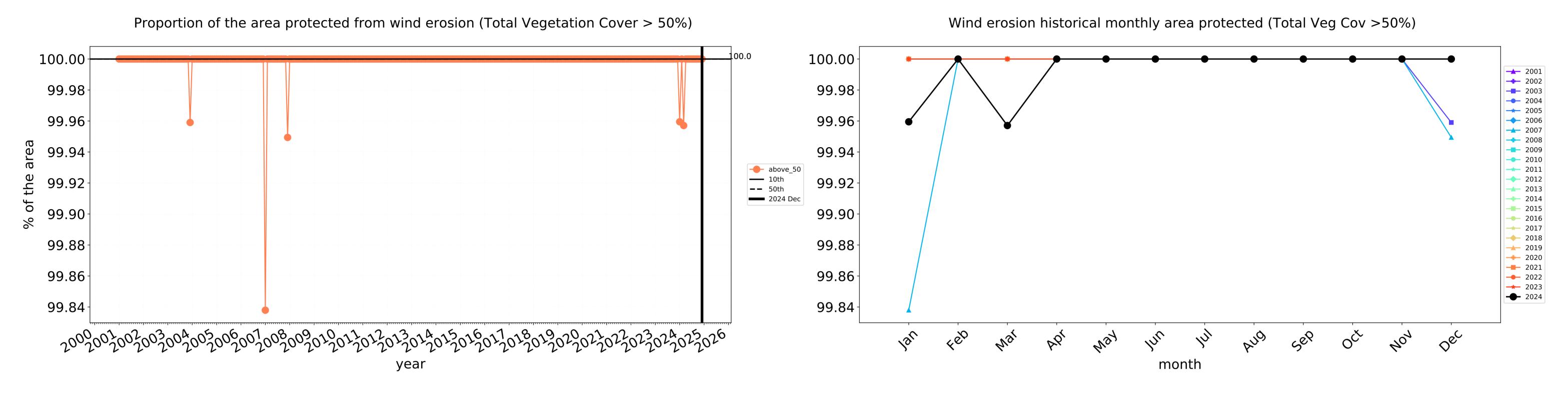


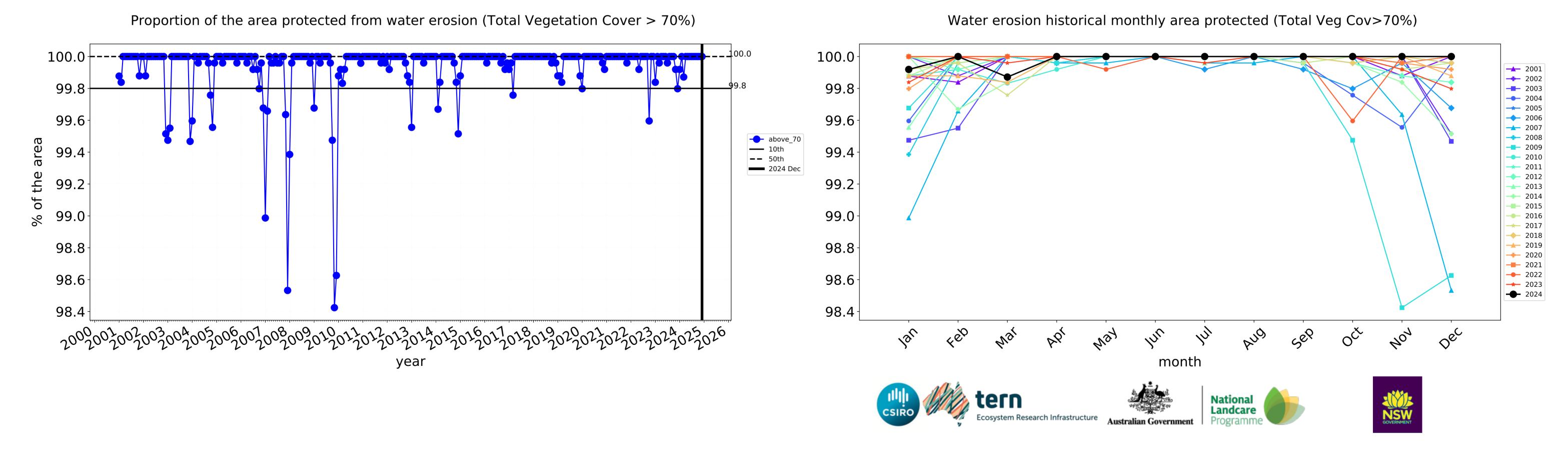


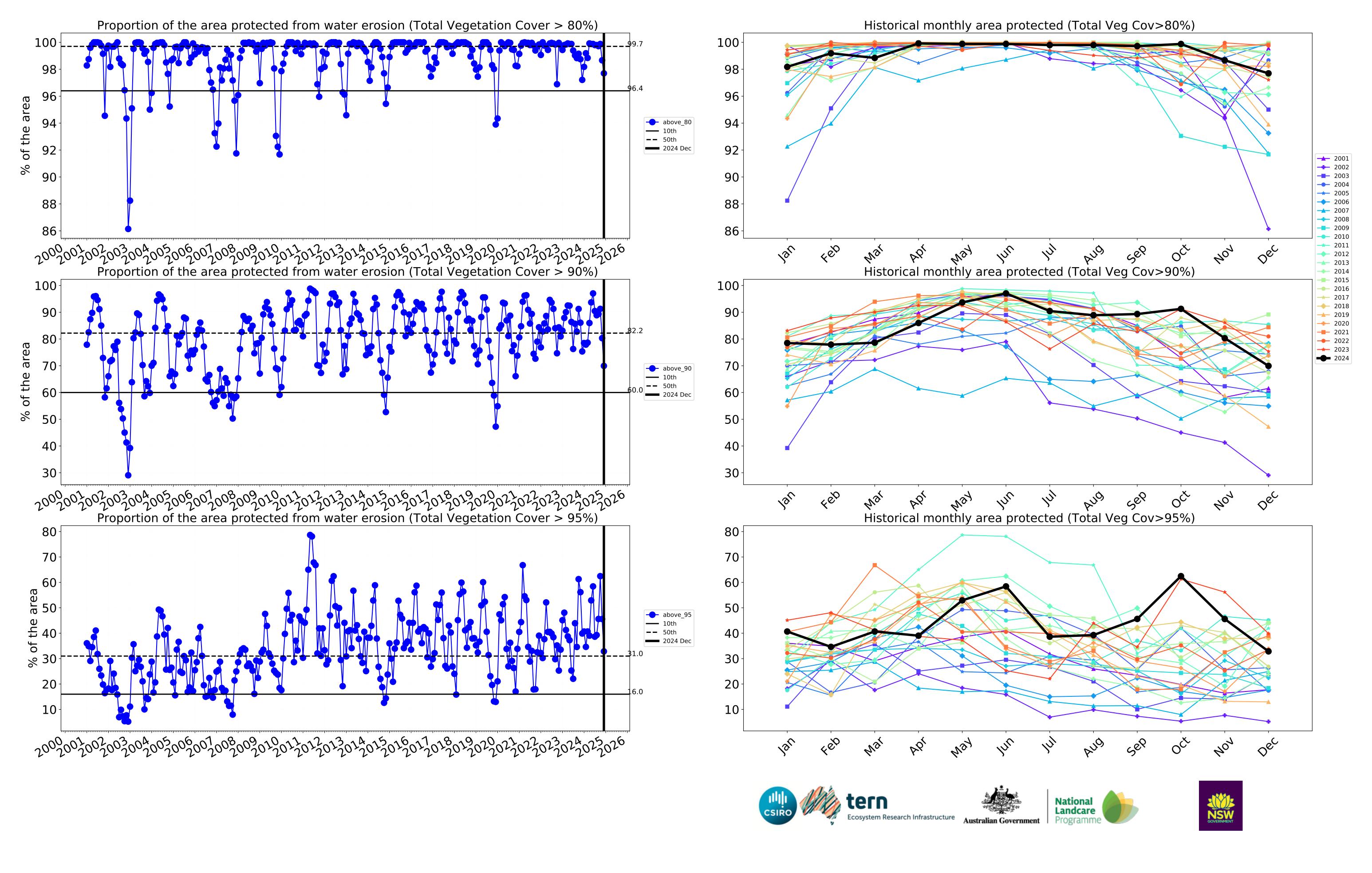




# **Grazing Woodland forest timeseries**

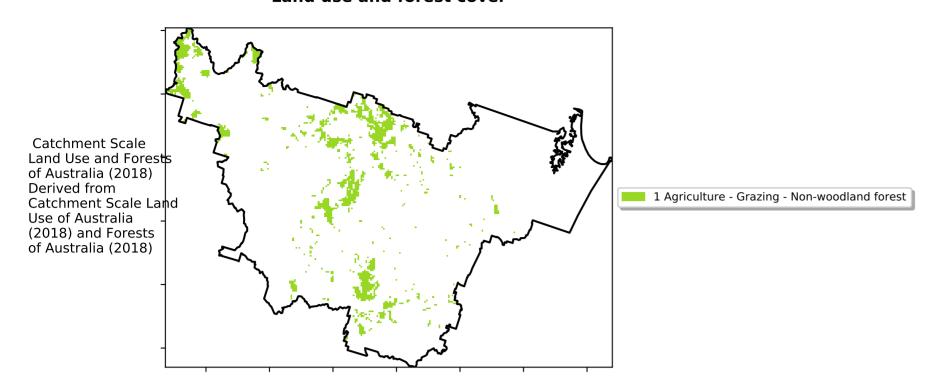




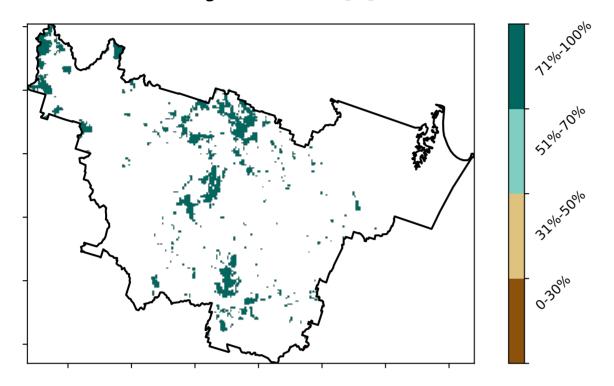


# **Grazing - Forest (non woodland)**

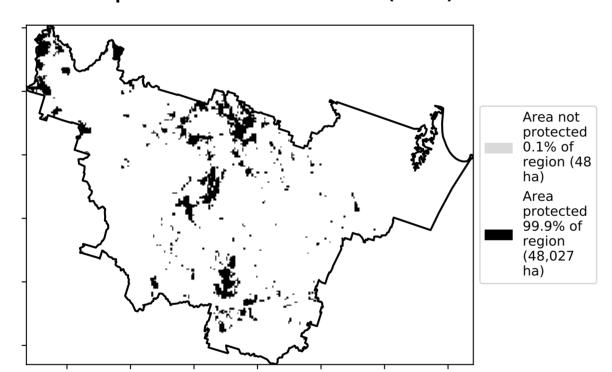
#### Land use and forest cover



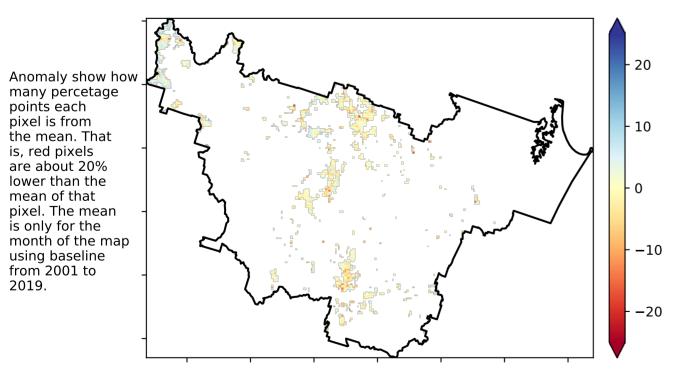
#### **Total Vegetation Cover [%]**



#### % Area protected from water erosion (>70%)

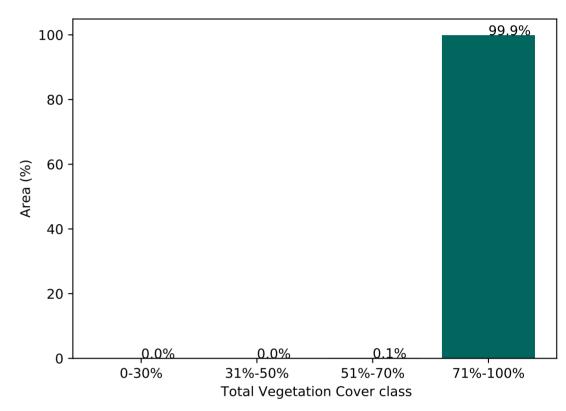


#### Total Vegetation Cover Anomaly [%]

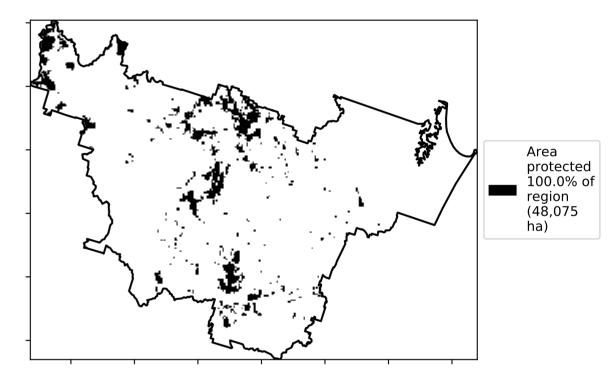


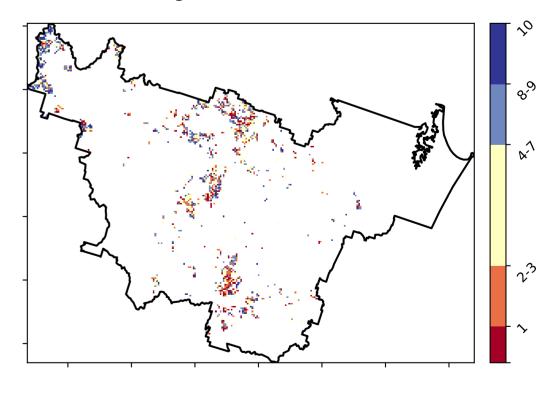
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)



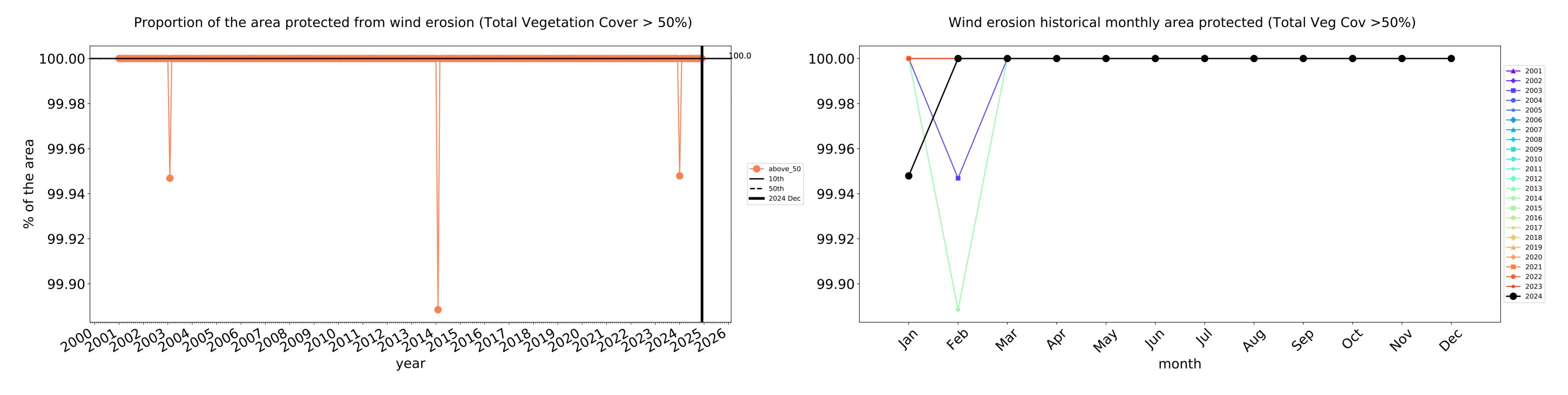


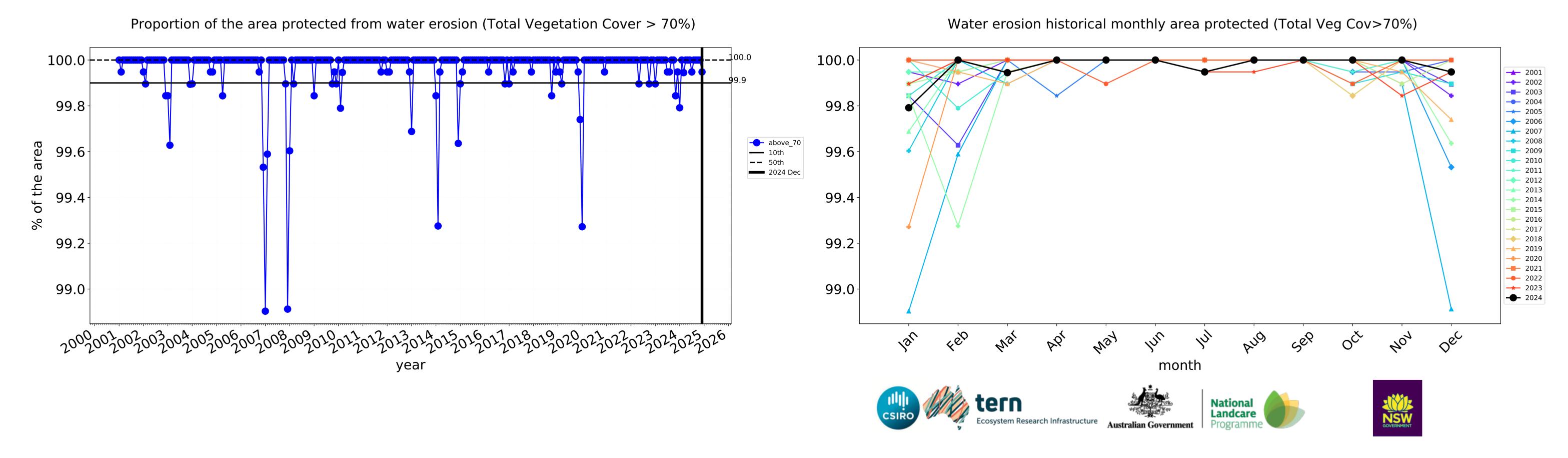


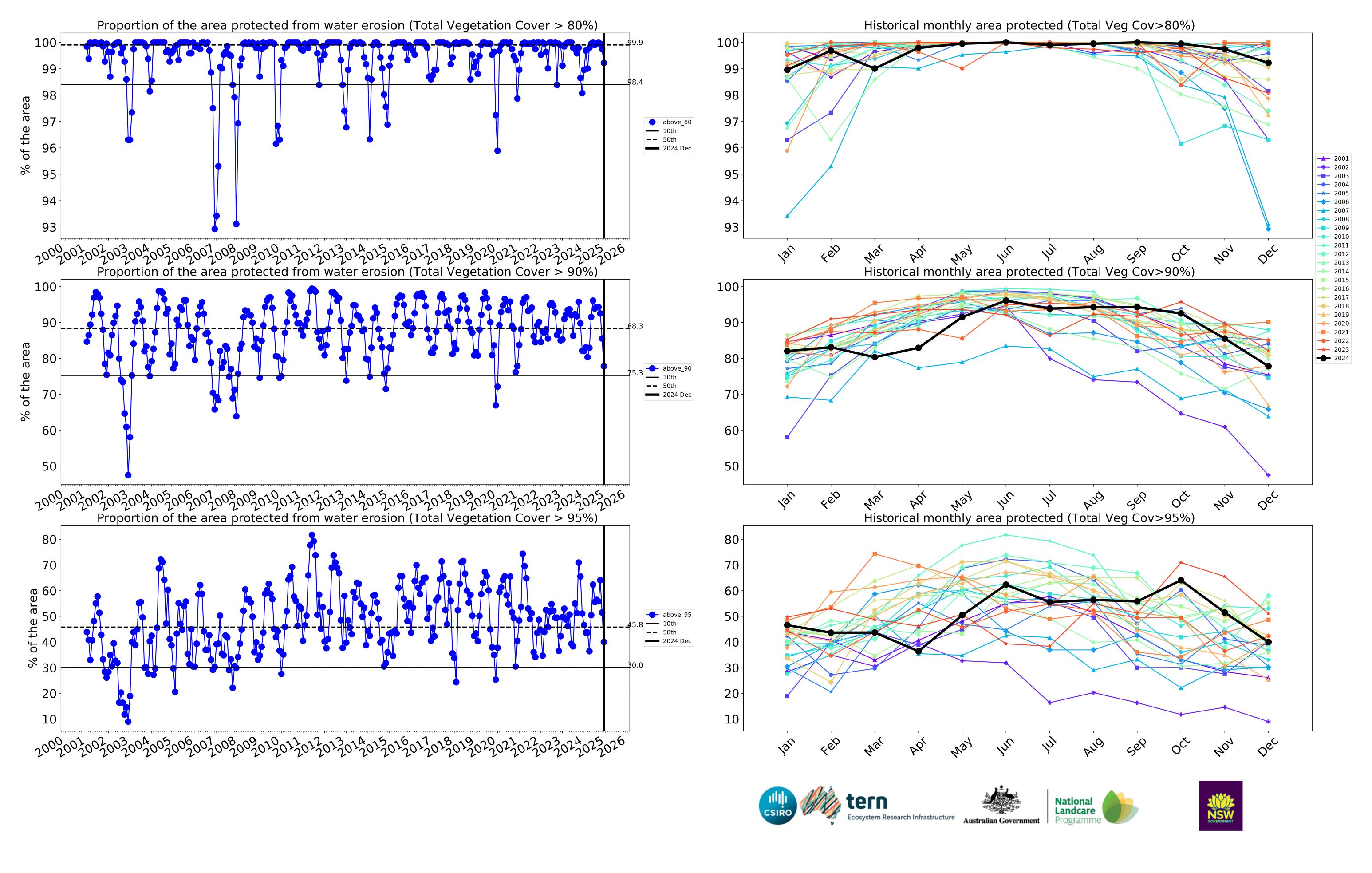








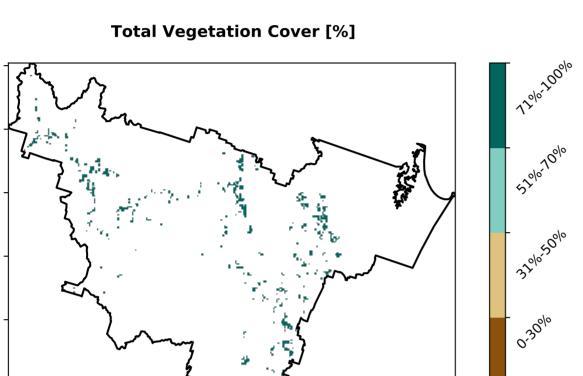


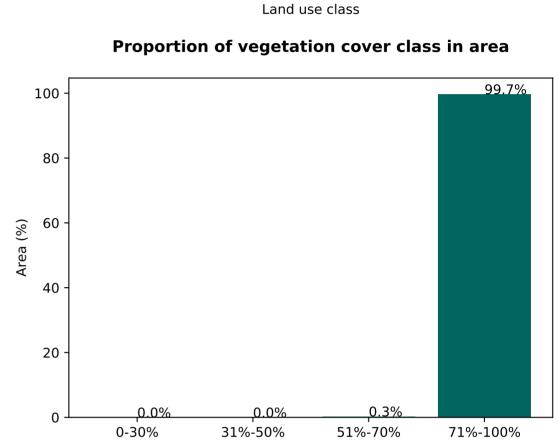


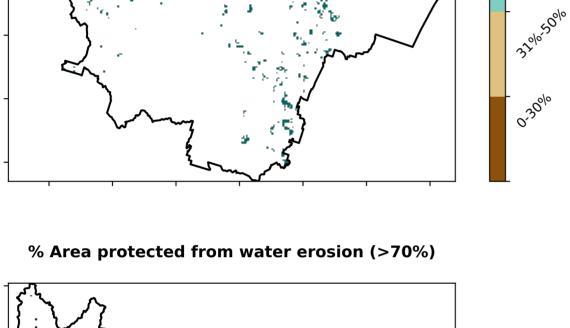
# Irrigation

# Land use and forest cover Catchment Scale Land Use and Forests of Australia (2018) Derived from Catchment Scale Land Use of Australia (2018) and Forests 1 Agriculture - Grazing - Irrigated 2 Agriculture - Cropping - Irrigated 3 Agriculture - Horticulture - Irrigated of Australia (2018)

#### Proportion of each land class in area 50 48.0% 40 35.8% Area (%) 0 20 16.3% 10 -0.50.5 1.0 0.0 1.5 2.0 2.5

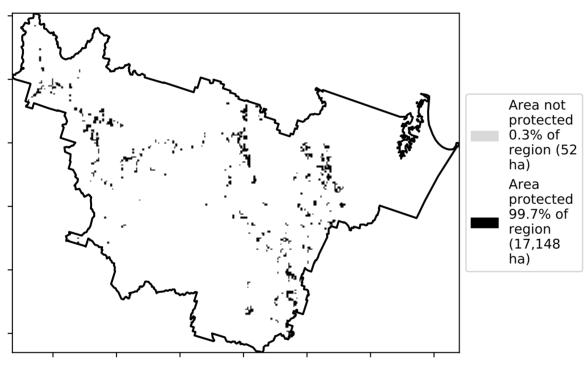


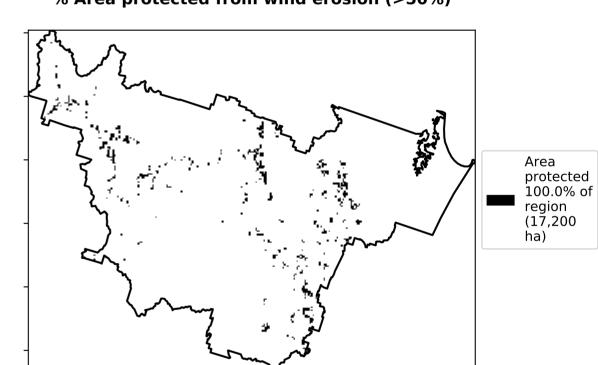


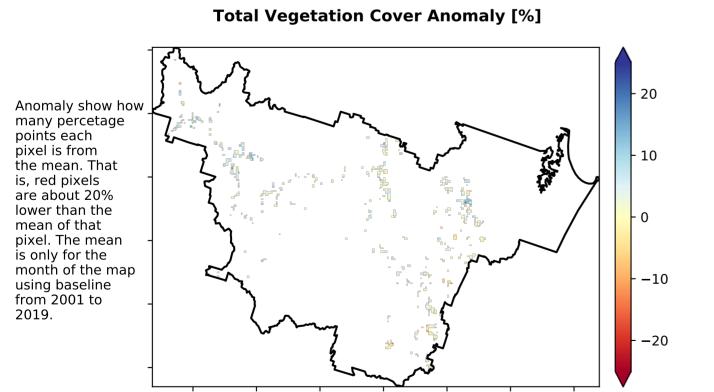




**Total Vegetation Cover class** 







Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

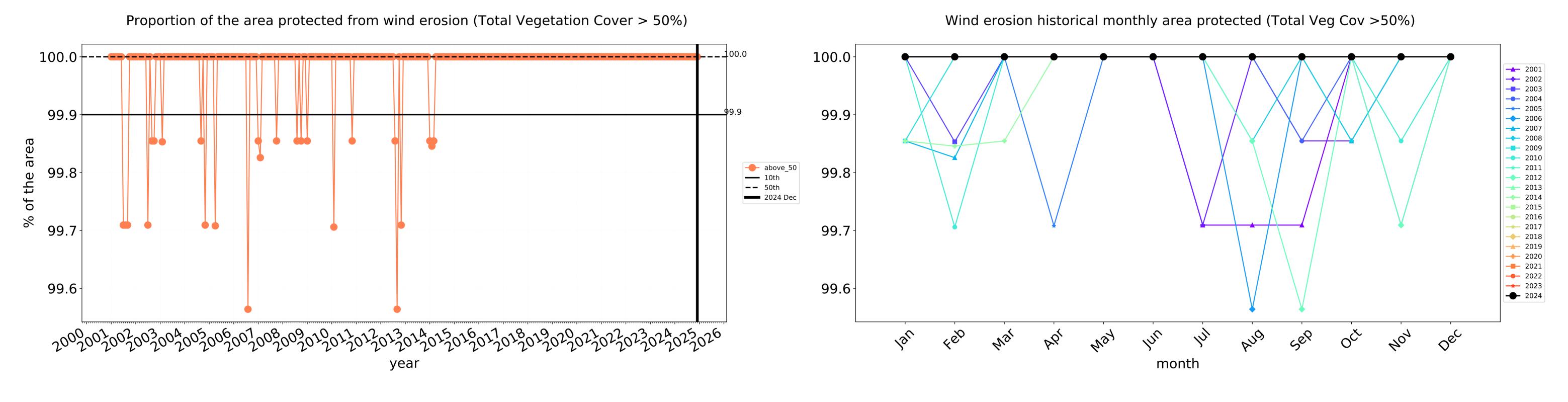
8,9

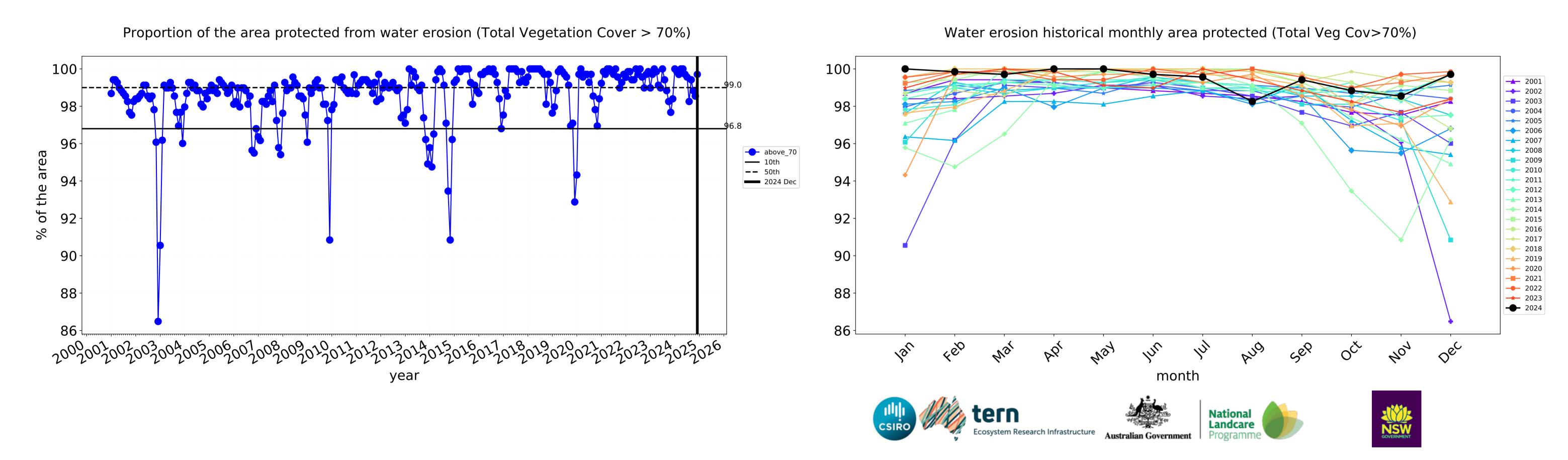


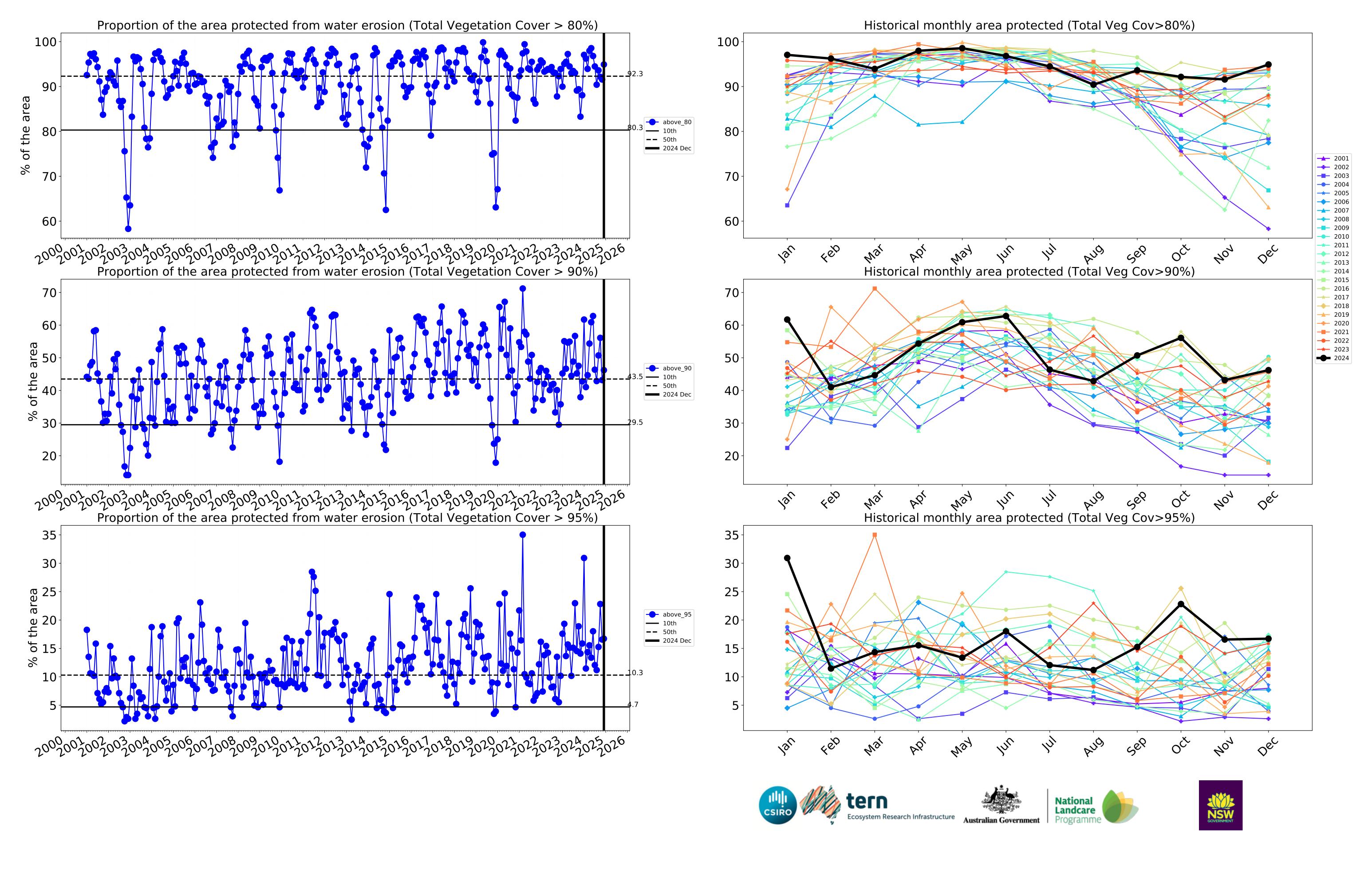




# **Irrigation timeseries**

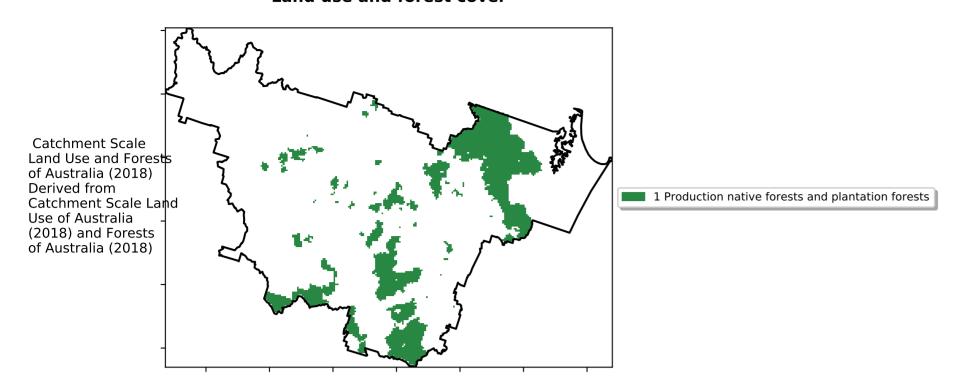




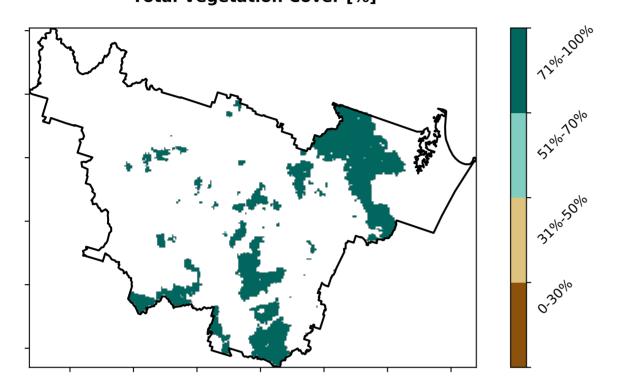


# **Production native forests and plantation forests**

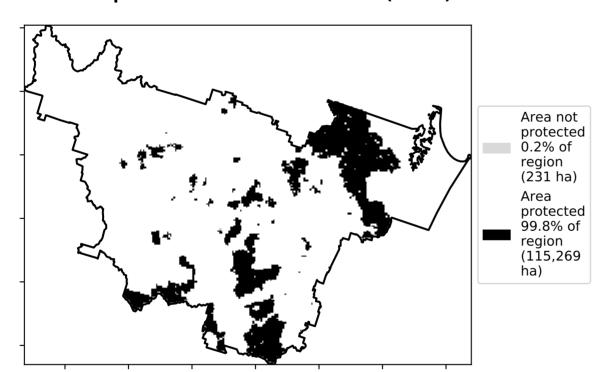
#### Land use and forest cover



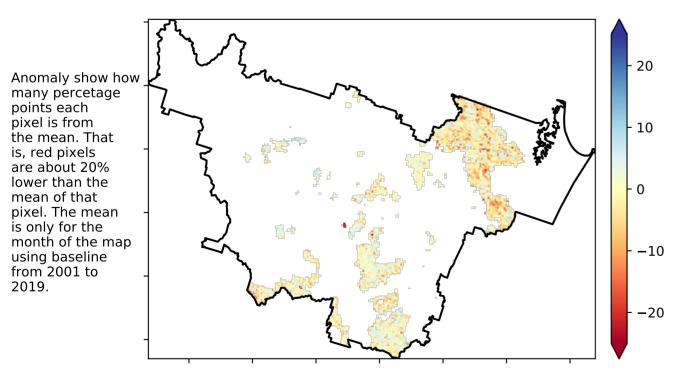
#### **Total Vegetation Cover [%]**



#### % Area protected from water erosion (>70%)

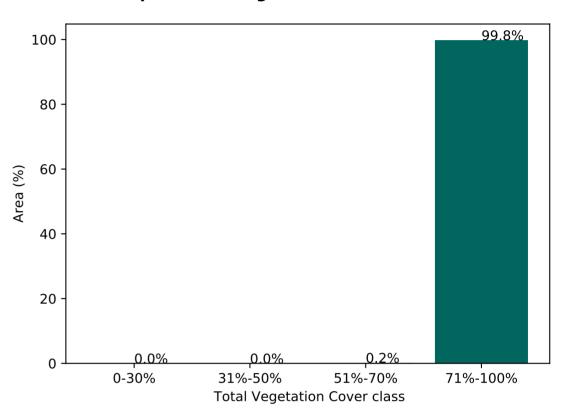


#### Total Vegetation Cover Anomaly [%]

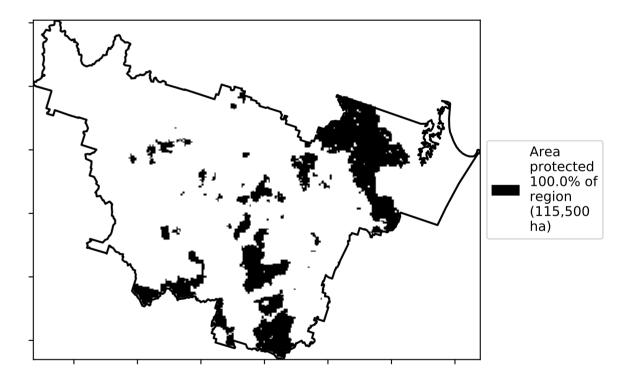


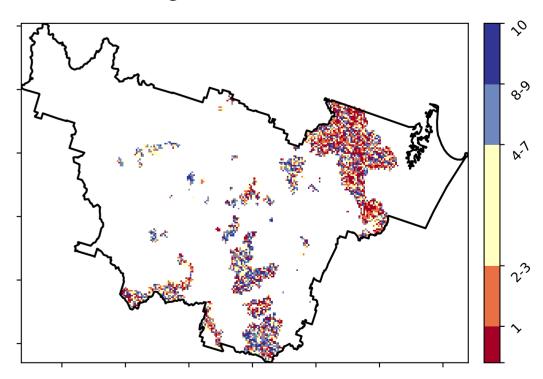
Deciles show where the pixel value lies in the record, from highest to lowest, for that month. That is, red pixels are in the lowest 10% of records for that month of the map using baseline from 2001 to 2019.

#### Proportion of vegetation cover class in area



#### % Area protected from wind erosion (>50%)





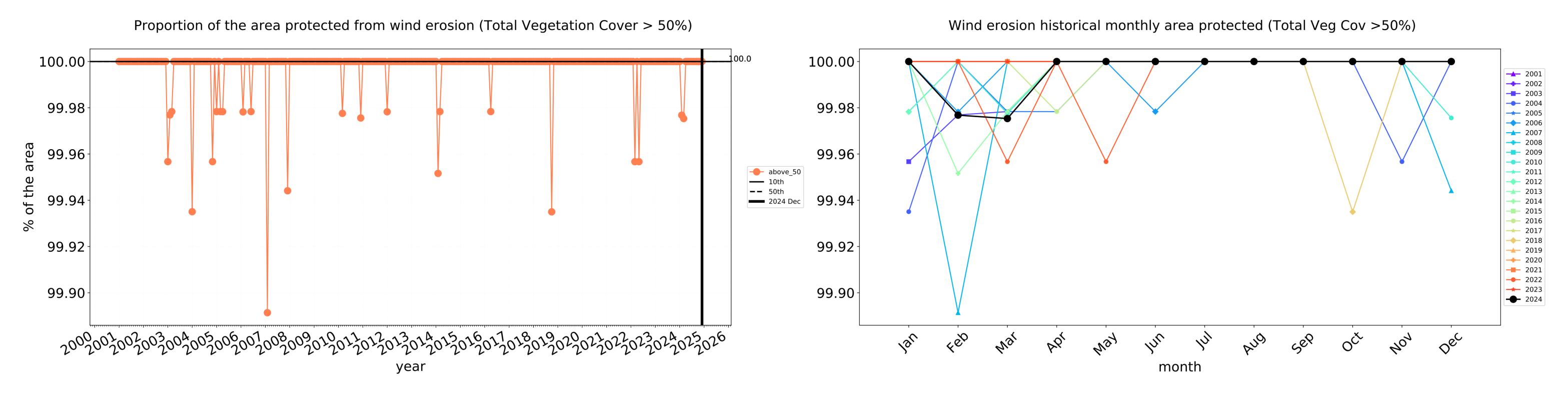


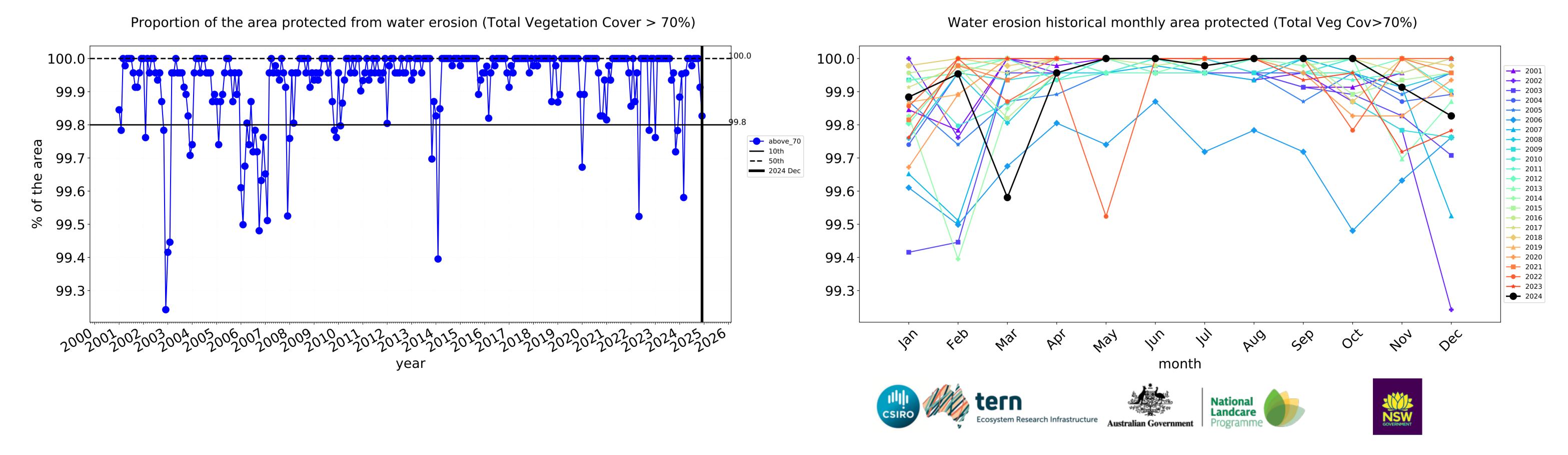


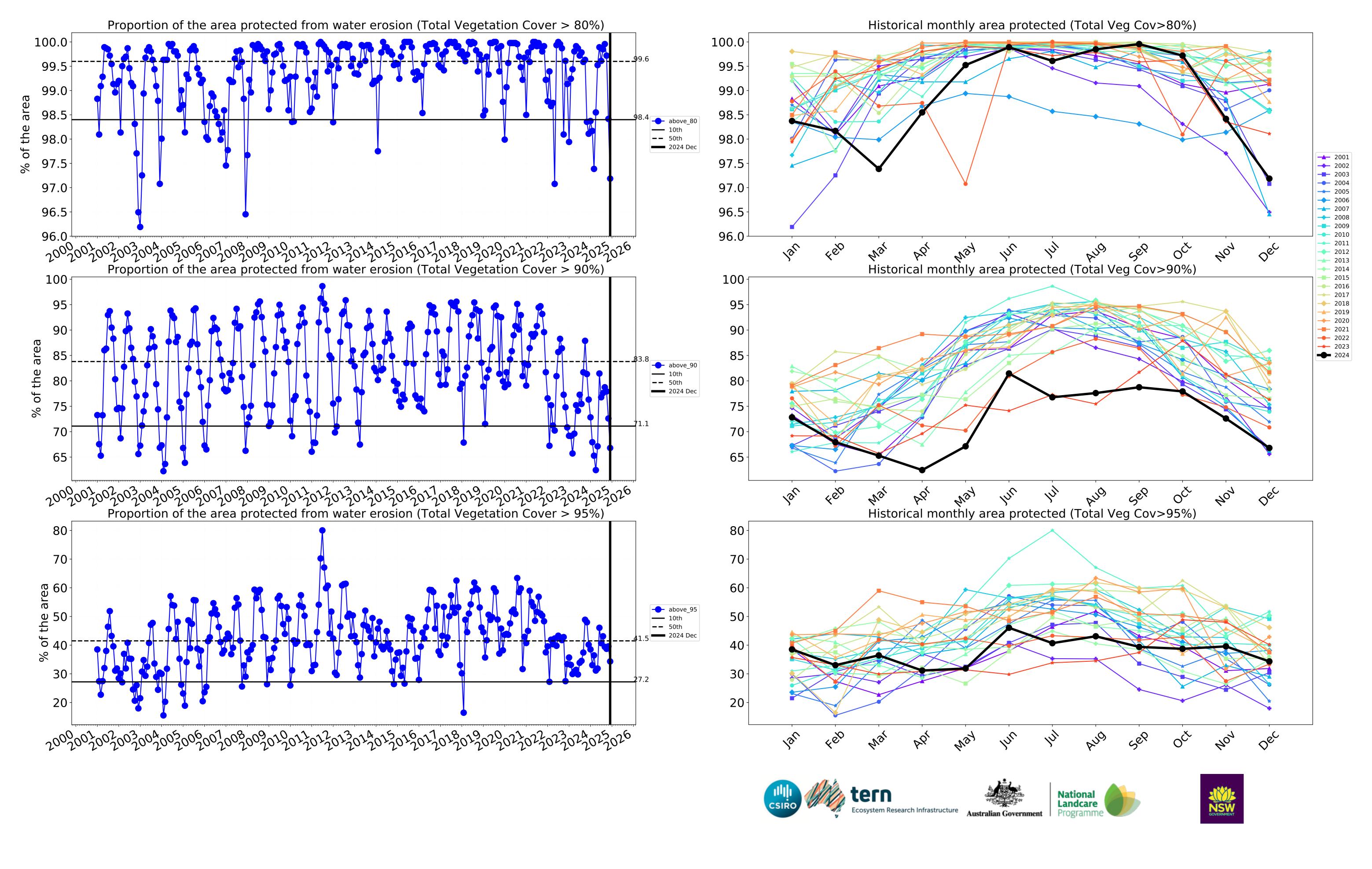




# **Production native forests and plantation forests timeseries**







# Gympie\_(R) (686,575 ha and no data 1,800 ha) Percentage area and hectares protected with TVC threshold 30,50,70,80,90 and 95%

Land use and forest cover Class	area(ha)	above_30	above_50	above_70	above_80	above_90	above_95
Entire region	686,575	100.0% 686,475	99.9% 686,175	99.5% 683,375	97.1% 666,325	67.0% 459,950	32.2% 221,025
Conservation and natural environments	142,250	99.9% 142,150	99.7% 141,875	99.0% 140,800	97.1% 138,150	80.8% 114,975	46.0% 65,400
Conservation and natural environments non forest	9,850	100.0% 9,850	99.5% 9,800	99.0% 9,750	96.2% 9,475	81.5% 8,025	52.0% 5,125
Conservation and natural environments Woodland forest	28,700	99.9% 28,675	99.8% 28,650	99.3% 28,500	97.6% 28,000	84.8% 24,325	48.7% 13,975
Conservation and natural environments Forest (non woodland)	103,700	99.9% 103,625	99.7% 103,425	98.9% 102,550	97.1% 100,675	79.7% 82,625	44.6% 46,300
Agriculture	397,600	100.0% 397,600	100.0% 397,600	99.9% 397,050	97.6% 387,925	63.6% 252,750	27.7% 110,075
Grazing	377,625	100.0% 377,625	100.0% 377,625	99.9% 377,125	97.7% 368,900	64.4% 243,300	28.3% 106,875
Grazing non forest	267,675	100.0% 267,675	100.0% 267,675	99.8% 267,200	97.4% 260,750	60.8% 162,625	25.2% 67,325
Grazing Woodland forest	61,875	100.0% 61,875	100.0% 61,875	100.0% 61,875	97.7% 60,450	69.9% 43,275	32.8% 20,325
Grazing - Forest (non woodland)	48,075	100.0% 48,075	100.0% 48,075	99.9% 48,050	99.2% 47,700	77.8% 37,400	40.0% 19,225
Irrigation	17,200	100.0% 17,200	100.0% 17,200	99.7% 17,150	94.9% 16,325	46.2% 7,950	16.7% 2,875
Production native forests and plantation forests	115,500	100.0% 115,500	100.0% 115,500	99.8% 115,300	97.2% 112,250	66.8% 77,150	34.3% 39,650







